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ABSTRACT

An evaluation of the Early Fives program of the Farmington (Michigan) Public Schools is reported. This extra-year program began in the 1980-81 school year. By the 1982-83 school year, tuition was no longer charged, and a systematic screening effort was implemented. Each Early Fives classroom contains a maximum of 15 children with a certified teacher trained in early childhood education and a full-time paraprofessional. In response to adverse literature on extra-year programs, an evaluation was conducted. Developmental records consisting of Gesell screening scores and samples of children's work were combined with Iowa Test of Basic Skills (ITBS), Cognitive Abilities Test (COAT), and Michigan Educational Assessment Program (MEAP) scores from grades 3 through 7 for program participants and matched non-participants who had been recommended for the program but had not attended. There were 73 matched pairs for ITBS/COAT data and 35 matched pairs for MEAP data. In all, 10 instruments were used to compare the matched pairs. Eight of 10 instruments indicated significant differences in favor of Early Fives participants. Participants had fewer retentions in grade and fewer remedial reading services than did the comparisons. Parent surveys indicated very favorable opinions of the Early Fives program. Recommendations for program continuation and improvement are made. Eleven appendices provide supplemental information. Thirteen figures and 33 tables present study findings. A 15-item list of references is included. (SLD)

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EARLY FIVES PROGRAM EVALUATION

FARMINGTON PUBLIC SCHOOLS

JUNE 4, 1991

U.S. DEPARTMENT OF EDUCATION
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INTRODUCTION

A national debate has been raging in the professional journals over extra-year programs. Policy makers can not help but be confused by the contradictory "research" evidence being cited on both sides of the debate. Many research studies cited in the professional journals indicate that extra-year programs at best have no lasting effect and at worst have many negative effects such as poor school performance and a high incidence of high school dropout (Meisels, 1987), (Meisels, 1991), (Eads 1990), (Freeman, 1990), (Shepard and Smith, 1986) (Shepard & Smith, 1989).

Sue Bredekamp of NAEYC has strongly criticized extra-year programs, terming them as a "supposedly more benign form of retention" She further maintains that "not only are transition grades potentially harmful for children, but they also do not facilitate school improvement. In fact they may actually be used to impede change" (Bredekamp,1990).

The widespread interpretation that extra-year programs can be harmful to children has resulted in national associations, state departments of education and some boards of educations adopting major policy statements banning all extra-year programs. The state of California has actually made transitional programs illegal.

In contrast to the studies portraying negative effects there are studies reporting that children who are youngest in their class are more likely to: repeat a grade (Langer et. al. 1984, Uphoff, 1985); to be referred to special education (DiPasquale et. al. 1980); and to be labeled as learning disabled (Diamond 1983, Maddux 1980). However, the interpretation of these studies has been dismissed by Shepard and Smith, as well as other researchers, because it is felt that such measures are more susceptible to teacher biases than are achievement tests. (Shepard and Smith, 1986)

The most extensive work on extra-year programs, which resulted in the rethinking of such programs, was done by Shepard and Smith as reported in their book, Flunking Grades. It is a study of sixteen independent research studies. James Uphoff, an outspoken critic of the Shepard and Smith findings, cites several specific examples where Shepard and Smith

interpreted away the original researchers Caggiano, Kilby, Raygor, Gilmore as well as Uphoff's own findings that the extra-year was beneficial. His examination of the original studies portrays that in a number of cases the actual researchers concluded from a variety of data that readiness and transition programs were working. Uphoff laments that "Shepard and Smith reached a different conclusion by dismissing other measures of achievement and satisfaction, instead insisting that standardized tests administered to young children were the **only** valid measure". (Uphoff, 1990, p.15)

Uphoff contends that not only is there a general disregard for retention data, special education and special services data, parent surveys, and teacher checklists, but there is an attitude that prevails in the academic community that research and evaluation studies done by local school districts is questionable at best as they allegedly lack sophistication and rigorous methodology and fail the ultimate test of being published in the professional journals. It is such research that James Uphoff has summarized in his book Real Facts from Real Schools (Uphoff, 1990). Uphoff summarizes nearly three dozen, mostly unpublished, studies which provided extensive support for Early Fives type programs.

A final concern that creates confusion in interpreting the data on Early Fives programs is the tendency for some researchers to infer that all forms of extra year interventions have essentially the same effect. The tendency to include data on academic retention along with Early Fives programs and various forms of transition programs has seriously clouded the picture. Such research practices make it very difficult for policy makers to make valid research based decisions.

PROGRAM DESCRIPTION

Farmington began the Early Fives Program in the 1980-81 school year. Tuition was charged and the program was administered by the Community Education Department. Two years later, during the 1982-83 school year, tuition was no longer charged and a systematic screening process was implemented. During the 1984-85 school year Mr. Richard Ruiter, the Farmington administrator responsible for the program, obtained certification as a Gesell trainer from the Gesell Institute. Since then, only trained and supervised testers have been employed to conduct the Gesell screening each year.

A standing steering committee was established to oversee the annual training, retraining and supervision of testers, as well as to review all Gesell profiles and placement recommendations. The committee has the original core of four members consisting of Richard Ruiter, the former early childhood administrator; the administrators at the two early childhood buildings: Alameda, Gayle Zimmerer, and Fairview, Mary Lou Somerville; Georgene Kinsman, a speech pathologist; and Betty Bayne, occupational therapist. In addition each year a Early Fives teacher also joined the committee to review the screening process and assist in the decision making process.

Each Early Fives classroom consists of a maximum of 15 children with a certified teacher trained in early childhood and a full time paraprofessional. The program has been staffed with two classrooms at each building providing two half day sessions for each class for a total of eight sections with a capacity to serve a maximum of 120 children. The classrooms are well-equipped with a wide range of materials following the High Scope material guidelines. All instructional activites are specifically geared to developmentally appropriate practices.

DESIGN OF STUDY

In response to the extensive adverse literature on extra year programs, in the Fall of 1990 an Early Fives Study Committee was established to formally review the program and make recommendations. The Committee consists of the following members:

•Barbara Humphries,	Alameda Preschool
•Shirley George,	Alameda Early Fives
•Barbara Krogrud,	Fairview Early Fives
•Joan Moors,	Larkshire Kindergarten
•Jeannette Snowman,	Beechview Kindergarten
•Geri Pugh,	Wood Creek Kindergarten
•Stephanie Riley,	Hillside First Grade
•Doreen Finer,	Kenbrook First Grade
•Carol Malzone,	Kenbrook First Grade
•Barbara Hendershot,	Beechview First Grade
•David Coffin,	Wooddale Principal
•Wally Prince,	Beechview Principal
•Dick Ruiter,	Hillside Principal
•Mary Lou Somerville,	Fairview Principal
•Gayle Zimmerer,	Alameda Principal
•Marilyn Winslow,	School Psychologist
•Sue Anker,	School Social Worker
•Barbara Bennett,	Fairview Staff Development
•Carolyn Mahalak,	Reading and Testing Coordinator
•Judith White,	Assistant Superintendent
•Marilyn Brennan,	Alameda Parent
•Gretchen McClymont,	Fairview Parent

Given, the mixed research findings in the literature; the uniquely different profile of the Farmington School District in comparison to other populations studied; and the extremely popular support the Early Fives Program in Farmington has received from both parents and staff, the Committee deemed it necessary to compile the extensive data available on Farmington's E-5 program into a comprehensive evaluation study upon which data based decisions might be better made.

To accomplish this task an evaluation sub committee consisting of three members of the Core Steering Committee, one central office assistant superintendent and the district test coordinator was identified. The committee was charged with the task of contracting with an evaluation consultant that could assist with designing and implementing an Early Fives Evaluation Plan. The Evaluation Sub-committee consisted of the following members:

- Judith White, Assistant Superintendent Curriculum/Staff Development
- Carolyn Mahalak, Reading and Testing Coordinator
- Richard Ruiter, Principal of Hillside Elementary School
- Mary Lou Somerville, Principal Fairview Early Childhood Center
- Gayle Zimmerer, Principal Alameda Early Childhood Center
- H. Robert Peper, Evaluation Consultant

The Evaluation Sub-committee met several times in December and January of 1990-91 with the evaluation consultant to develop an evaluation design and implementation plan. It was decided to utilize existing data as much as possible and avoid administering new measures on the children.

A wealth of developmental records consisting of Gesell Scores and samples of childrens' work had been preserved and were available in file boxes on most all children who attended the E-5 program over the past eleven years. In addition similar records exist for a group of children who were also tested with the Gesell and recommended to the E-5 program based upon the screening results but whose parents chose not to have their children participate. This later group will be referred to as the Comparison Group.

The Test Matrix that follows (Page 9) is helpful in visualizing the data points for each cohort as well as the projected grade placement for each cohort. The first two Cohorts 1980-81 and 1981-82 were ruled out as the program was in the formative stages; tuition was assessed; and records were not consistently maintained. As can be seen in the Test Matrix, test data was available for Cohorts 3-6 1982-86. However, the computerized test file only went back to the 1989 for MEAP and 1988 for ITBS & COAT. This was most unfortunate in that it eliminated an analysis of Two ITBS, COAT and MEAP data points.

The Gesell scores and basic information were entered into a data base for both groups. Next a test file for these children was created consisting of the Iowa Test of Basic Skills (ITBS) and the Cognitive Abilities Test (COAT) (administered to all third and fifth graders each year) as well as the Michigan Educational Assessment Program (MEAP) (administered to all fourth and seventh graders). Only children who had one of these tests were included in the initial sample. This initial sample was then further refined by creating matched pairs of children for (a) Gesell Mean Developmental Ratio, (b) gender and (c) race for each year data was analyzed.

The Evaluation Plan follows the format that was used for the Farmington Highmeadow Common Campus Evaluation which was adapted from the multiple-method and multiple-source approach advocated by B. R. Worthen and promoted by Oakland Schools. The Evaluation Plan can be found in Appendix 8.

The Evaluation Committee generated six (6) Evaluation Questions. The questions and respective measurements are as follow:

- 1. Has the Early Fives intervention had any long range positive or negative effects on the childrens' Academic Achievement?
  - •MEASUREMENTS:ITBS, COAT, MEAP, Report Card Grades, Need for Resource Room support, Need for Remedial help, Retention data, 1988 &1991 Parent Surveys.

- 2. Has the Early Fives intervention had any long range positive or negative effects on the childrens' School Affective Development?
  - •MEASUREMENTS: Report Card ratings for Attitude Toward School, Work Habits and Social Adjustment. 1988 &1991 Parent Surveys.

- 3. What do Early Fives Parents report about the Program after Two years (1st grade)? Four years (grade 3)? Six to eight years (grades 5 to 7)?
  - •MEASUREMENTS: Early Fives Parent Survey of 1988, Parent Phone Survey of small sample of students (25) now in 7 th grade.

- 4. What do Teachers & Principals report about the Program?
  - •MEASUREMENTS: Survey of K-3 teachers and Elementary Principals. Full Committee input and summary report.

- 5. What are the characteristics of an Early Fives child?
  - •MEASUREMENTS: Early Fives Records and 3rd Grade Cognitive Skills Test.

- 6. What does a review of the literature reveal on Early Fives type programs?

DESCRIPTION OF SAMPLES

As indicated in Table 1 (Page 10) there were a total of 344 boys and 145 girls for a total of 501 children from Cohorts 3-6 combined who were tested with the Gesell. For 250 of these children ITBS, COAT &/or MEAP test results were located. These 250 E-5 and Comparison groups were matched for Gesell Ratio, gender and race resulting in a total of 73 matched pairs for ITBS/COAT data and 35 matched pairs for MEAP data. In all but a few cases children with MEAP data also had ITBS/COAT data.

For the 73 matched pairs of ITBS/COAT data there were only 9 pairs for Cohort 3; 9 pairs for Cohort 4; 17 pairs for Cohort 5; and 38 pairs for Cohort 6. Cohort 3 was so small due to the limited number of Comparisons located. Although Cohort 4 appeared to have a larger number to draw from, in reality there were far fewer as some records had 3rd grade test data and others had only 5th grade data. The Total Matched Sample consisted of 106 boys and 40 girls. See Table 1 (Page 10) for a breakout of gender for each Cohort in the Matched Sample.

Table 1A (Page 11) reflects the median age of the Matched E-5 and Comparison for Cohorts 3-6. Median ages vary from 5 days older for E-5 Cohort 3 to 48 days younger for Cohort 6. The Median age for E-5's in Cohort 4 is 38 days younger than the Comparison Group and 26 days older for Cohort 5.

Table 1B (Page11) reflects the Median Gesell Developmental Ratio for the Matched E-5 and Comparison samples for Cohorts 3-6. The Gesell Developmental Ratio was derived by computing a mean developmental score of the subtests and then dividing by the child's chronological age on the date of test. Median Gesell Ratios varied between E-5 and Comparison Groups with a minimum of .01 for Cohort 3 and .05 for Cohort 5. Median Gesell Ratio ranged from .86 for the Comparison group in Cohort 5 (1984) to .96 for the E-5 group in Cohort 6 (1985).

The mean percentile for the COAT Composite for the E-5 is 75.89 as compared to 62.48 for the Comparison Group. See Table 2B (Page 18) for mean COAT percentiles for each subtest and Appendix 2B (Page 48) for the mean NCE for each subtest for each Cohort.

FARMINGTON EARLY FIVES EVALUATION: GRADE & TEST MATRIX ANALYSIS

3 & 5 **Bold** * = 3rd & 5th Grade Achievement Test Results

4 & 7 **Bold** *= 4th & 7th Grade MEAP Results

Program= Early Fives (E5) Received Program

Comparison= Recommended but NOT in program.

		ORIGINAL	# LOCATE	80/81	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91
COHORT 1	PROGRAM			E5	K	1	2	*3	*4	*5	6	*7	8	9
1980-81	COMPARISON			K	1	2	*3	*4	*5	6	*7	8	9	10
COHORT 2	PROGRAM				E5	K	1	2	*3	*4	*5	6	*7	8
1981-82	COMPARISON				K	1	2	*3	*4	*5	6	*7	8	9
		ORGNL#	#LOCATED	ITBS	MEAP									
COHORT 3	PROGRAM	53	27	9	7	E5	K	1	2	*3	*4	*5	6	*7
1982-83	COMPARISON	34	13	9	7	K	1	2	*3	*4	*5	6	*7	8
COHORT 4	PROGRAM	63	27	9			E5	K	1	2	*3	*4	*5	6
1983-84	COMPARISON	45	25	9			K	1	2	*3	*4	*5	6	7
COHORT 5	PROGRAM	63	33	17	7			E5	K	1	2	*3	*4	*5
1984-85	COMPARISON	48	29	17	7			K	1	2	*3	*4	*5	6
COHORT 6	PROGRAM	94	47	38	21				E5	K	1	2	*3	*4
1985-86	COMPARISON	101	49	38	21				K	1	2	*3	*4	*5
COHORT 7	PROGRAM									E5	K	1	2	*3
1986-87	COMPARISON									K	1	2	*3	4
COHORT 8	PROGRAM										E5	K	1	2
1987-88	COMPARISON										K	1	2	*3
COHORT 9	PROGRAM											E5	K	1
1988-89	COMPARISON											K	1	2
COHORT 10	PROGRAM												E5	K
1989-90	COMPARISON												K	1
COHORT 11	PROGRAM													E5
1990-91	COMPARISON													K

SUMMARY OF POTENTIAL AND ACTUAL TEST DATA

The BOLD diagonal lines reflect the final Seven (7) comparisions of available test data between the Early Fives and the respective Comparision Groups for Cohorts 3-6.

The analysis provide the following comparisons:

- 5th & 7th grade test results between the two groups in Cohort 3
- 5th grade test results between the two groups in Cohort 4
- 3rd &4th grade test results between the two groups in Cohort 5
- 3rd & 4th grade test results between the two groups in Cohort 6

The THIN diagonal lines reflect available test data that was ruled out of the study for the following reasons:

1. All data in Cohort 1 & 2 was ruled out as the program was in the formative stages; tuition was assessed; and records were not consistently kept.

2. MEAP data prior to 1989 & ITBS & COAT data prior to 1988 was not readily available for computer analysis.

3. CTBS and Cog. Skills test data for 90/91 was not available until late Spring.

The Test Matrix above reflects an eleven year projected grade/year each group should be in if not retained. The potential comparison test data is indicated by the light diagonal lines. The **actual** comparison test data is reflected by the **bold diagonal lines.** The inserted box chart to the left center reveals: (1.) The number of children in the ORIGINAL groups for Cohorts 3-6. (2.) The number of children for which test data was LOCATED. (3.) The number of children with ITBS, COAT and MEAP scores that were MATCHED for: (a.) Gesell Developmental Ratio, (b.) Sex and (c.) Race.

TABLE 1: COMPARISON OF THE NUMBER OF ORIGINAL RECORDS WITH THE NUMBER OF MATCHED TEST RECORDS

		NUMBER OF ORIGINAL RECORDS			NUMBER OF LOCATED TESTS			NUMBER OF TESTS MATCHED FOR GESELL			
		BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL ITBS	TOTAL MEAP
COHORT 3	PROGRAM	42	11	53	26	1	27	8	1	9	7
1982-83	COMPARISON	20	14	34	8	5	13	8	1	9	7
COHORT 4	PROGRAM	46	17	63	19	8	27	8	1	9	NA
1983-84	COMPARISON	25	10	45	20	5	25	8	1	9	NA
COHORT 5	PROGRAM	53	13	63	27	6	33	11	6	17	7
1984-85	COMPARISON	26	22	48	14	15	29	11	6	17	7
COHORT 6	PROGRAM	66	25	94	31	16	47	26	12	38	21
1985-86	COMPARISON	66	33	101	29	20	49	26	12	38	21
	TOTAL	344	145	501	174	76	250	106	40	146	70

TABLE 1: Provides an analysis of the total number and gender count of the **ORIGINAL** Gesell records for Cohorts 3-6; the total number and gender count of ITBS, COAT and/or MEAP test scores **LOCATED** for the original list; and the number and gender count of E-5 and Comparison children that were **MATCHED** for Gesell Mean Ratio, sex and race.

TABLE 1A: MEDIAN BIRTH DATE FOR TOTAL POPULATION AND MATCHED SAMPLES FOR COHORTS 3-6

	EARLY FIVES TOTAL POPULATION MEDIAN BIRTH DATE	COMPARISON TOTAL POPULATION MEDIAN BIRTH DATE	MEDIAN AGE DIF. IN DAYS	EARLY FIVES MATCHED SAMPLE MEDIAN BIRTH DATE	COMPARISON MATCHED SAMPLE MEDIAN BIRTH DATE	MEDIAN AGE DIF. IN DAYS
1982	9/22/77	9/7/77	15	9/8/77	9/13/77	-5
1983	9/27/78	7/26/78	63	9/28/78	8/21/78	38
1984	9/27/79	8/20/79	38	8/8/79	9/3/79	-26
1985	9/20/80	6/25/80	87	10/13/80	8/26/80	48

TABLE 1A: Reflects the median Age of Matched E-5 and Comparison for Cohorts 3-6. Median ages vary from 5 days older for E-5 Cohort 3 to 48 days younger for Cohort 6.E-5 Median Age for Cohort 4 is 38 days younger than the Comparison Group and 26 days older for Cohort 5.

TABLE 1B: MEDIAN GESELL DEVELOPMENTAL RATIO FOR MATCHED EARLY FIVES AND COMPARISON GROUPS FOR COHORTS 3-6

	EARLY FIVES MEDIAN GESELL DEVELOPMENTAL RATIO	COMPARISON MEDIAN GESELL DEVELOPMENTAL RATIO
1982	0.92	0.93
1983	0.90	0.87
1984	0.91	0.86
1985	0.96	0.93

TABLE 1B: Reflects the Median Gesell Developmental Ratio for the Matched Early Five and Comparison samples for Cohorts 3-6. The Gesell Developmental Ratio was derived by computing a mean developmental score of the subtests and then dividing by the child's chronological age on the date of test.

DESCRIPTION OF MEASURES AND ANALYSES

All data was analyzed by comparing the means of the Early Fives with the Comparison Group for each individual cohort on each measure as well as for the aggregate total of all cohorts combined. A two tailed test of statistical significance with a minimum probability level of .05 was applied in all analyses. A paired T test was applied to the means of all matched data and a Chi Square two-by-two analysis was made of all frequency data.

The numerical values for all tables are accompanied with bar graphs for a concise graphic representation of the data. The tables have been intentionally simplified to present only means, percents and level of significance. Comprehensive statistical analyses of the data are presented in the appendices for the reader who is interested in analyzing statistical details.

As the percentile is more readily understood, all values in the tables have been converted from NCEs to Percentiles. Percentiles can not be aggregated as they are not equal interval values, thus Normal Curve Equivalents (NCEs) were utilized to aggregate means for ITBS and COAT test data and then converted to percentiles for the readers convenience and hopefully improved understanding of the data. The data in the appendices are reported in the original NCE values. The reader is cautioned not to mistake the NCE values in the appendices with Percentiles used in the text of the narrative.

The following is a brief description of the various measures employed in this study:

- **3rd. and 5th. grade IOWA Test of Basic Skills (ITBS)** means for Vocabulary, Reading, Math Concepts, Problem Solving, Computation, Total Math and Total Battery were calculated and analyzed.

- **3rd. and 5th. grade Cognitive Abilities Test (COAT)** means for Verbal, Quantitative, Nonverbal and Composite Total were calculated and analyzed.

- **4th and 7th grade Michigan Educational Assessment Program (MEAP)** mean standard scores for Story Reading and Information Reading and the mean raw score for Math were calculated and analyzed.

- **Retention data** was derived from the 136 E-5 and 115 Comparison unmatched ITBS test dates found to be a year later than they should have been if a child had progressed normally from his original date of enrollment. It was inferred that the child had been retained when the test date was a year later than projected. The percent of children in each group taking the ITBS a year later than expected was tabulated and analyzed.

- **Receiving Learning Center Service** was obtained from a Learning Center staff review of the 73 pairs of matched names to identify children who had received remedial reading services. The group identification of the children was not disclosed. The percent of children in each group receiving Learning Center Service was tabulated and analyzed.

- **Special Education Services** received by each group was calculated from an analysis of the initial study of 48 matched pairs for which report cards were obtained. The percent of children in each group receiving Special Education Service was tabulated and analyzed.

- **3rd grade report cards** were located for 58 of the 73 matched pairs. Analyses were made of the polar categories of Needs Improvement and High Achievement for Behavior, Reading, and Math. Analyses consisted of comparing the mean number of marks received for the two groups for each category as well as calculating the percent of children from each group who had at least one or more marks in each category.

  A further analysis was made by calculating the percent of children from each group who received at least one High Achievement mark for "Contributes to Discussion" on <u>both</u> of the two possible categories (Science and Social Studies). This latter criterion was judged to be related to a child's success and feelings of self confidence in school. See Appendix 5C for a sample of the 3rd grade report card.

- **7th grade report cards** were located for 7 of the 9 original matched pairs from Cohort 3. The first semester Grade Point Average in Language Arts and Math was calculated and analyzed as well as the respective mean scores for Effort and Citizenship for both groups. The mean number of days absent first semester for each group was also analyzed. Only first semester data was available for the E-5s as they were just beginning their 7th grade second semester at the time of the study. See Appendix 6 (Page 57-58) for a sample of a 7th grade report card.

- **A Parent Survey** was conducted in 1988. The survey was mailed to approximately 423 parents of children in Cohorts 2-7 who had participated in the Early Fives Program. 147 surveys were returned. The percent of parents responding to each category was calculated and analyzed. See Appendix 7 (Page 59-60) for a sample of the 1988 Parent Survey.

- **A Parent Phone Follow-up Survey** was conducted collecting data from 24 of 25 randomly selected parents of Early Fives Program children from Cohort 3. As these children were in seventh grade (at the time of the follow up study) it was felt that if the children experienced any negative effects over time, the parent observations would reveal these findings. Another intent of this survey was to validate the strong positive results of the 1988 survey (with only a 35% return rate largely representing children in Kdg. and 1st.) by obtaining as near to a 100% response rate as possible on a stratified random sample of older students. The same instrument used in the 1988 study was used to conduct a semi-structured phone interview. The phone survey was administered by the five staff members of the Early Fives Study Committee. Each member was assigned 5 parents. The percent of parents responding to each category was calculated and analyzed.

- **A Staff Survey** was designed by the Early Fives Study Committee and distributed to all Farmington Prekindergarten, Kindergarten, 1st, 2nd, 3rd grade teachers and all Elementary Principals. Each response category for each question was assigned either a positive or negative value (See Table 8B Page 33). The percent of staff responding to each individual category as well as the mean positive and mean negative was calculated and analyzed on the basis of their assignment as well as the total aggregate.

FINDINGS

The aggregate data for all Cohorts 3-6 with 73 matched pairs of data reveals significantly higher mean scores for the Early Fives over the Comparisons on all subtests of the ITBS as well as the Total Battery with a mean percentile difference of 15.17 as observed by a mean of 79.03 for E-5s in contrast to 63.86 for the Comparison. The largest difference, 21.28 percentile points, was on the Computation subtest with a mean percentile of 78.15 for E-5s and 56.87 for the Comparison. The Early Fives consistently did the best on the math subtests. In fact they slightly exceed the Farmington district average on all math subtests. See Table 2A (Page 16).

As reflected in Table 2A-2 (Page 17), an analysis of each Cohort reveals the Early Fives consistently had higher means on every subtest of the ITBS. However, given the smaller N in the Cohort samples the Total Battery mean difference of 11.11 for Cohort 5 with a mean of 72.40 for E -5 and 61.29 for the Comparison was not statistically significant. Furthermore, the mean difference of 10 points for the E-5 mean of 79.29 and Comparison of 69.29 for Cohort 6 was not significant but close with a T value of 1.86 and P value of .07. Upon further analysis of Cohort 6 subtest results as evidenced in Appendix 2A (Page 48), the E-5 Math subtests are significantly higher with a P value of .004 for Total Math. However, as reflected in Appendix 2A, none of the ITBS subtest means were significantly different for Cohort 5.

Table 2B (Page 18) reflects the aggregate data for all Cohorts 3-6 with significantly higher mean scores for the Early Fives over the Comparisons on all subtests of the COAT as well as the Composite Total with a mean percentile difference of 13.41 as observed by a mean of 75.89 for E-5s in contrast to 62.48 for the Comparison.

Upon further analysis of the comparison of the two groups for each Cohort, Table 2B-2 (Page 19) reveals that E-5s have higher mean COAT scores on all Composite Totals. Although these differences were significant for Cohorts 3 and 6 as well as the aggregate group (and just short the .05 level of significance with a P=.056 for Cohort 5) there was no significant difference for Cohort 4. The reader is referred to Appendix 2B (Page 48) and 1A-1D (Page 42-45) if interested in detailed analyses by subtest of each Cohort.

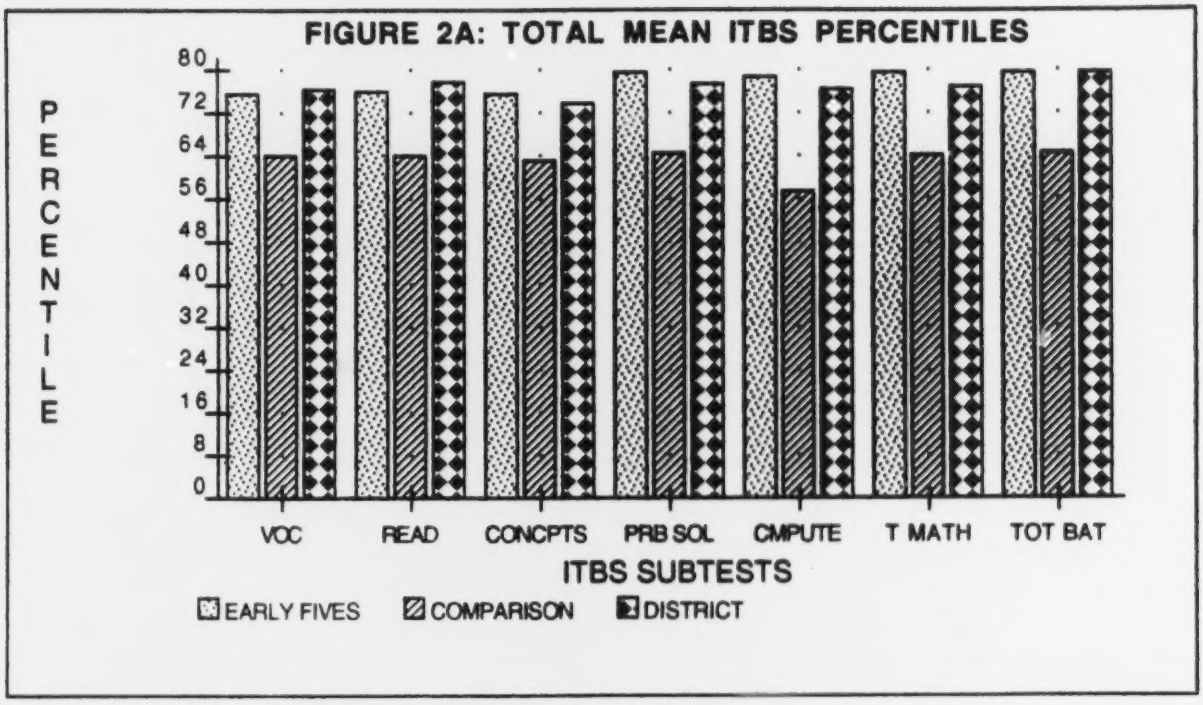

TABLE 2A IOWA TEST OF BASIC SKILLS (ITBS) TOTAL MEAN PERCENTILES FOR ALL COHORTS 3-6 MATCHED FOR GESELL RATIO AND GENDER

	N	VOC	READ	CONCPTS	PRB SOL	CMPUTE	T MATH	TOT BAT
EARLY FIVES	73	75.08	75.56	75.16	79.12	78.15	79.18	79.03
COMPARISON	73	63.49	63.65	62.79	63.95	56.87	63.34	63.86
DISTRICT	3069	76.03	77.30	73.42	76.71	76.01	76.44	79.18
PAIRED T TEST E-5 & COMPAR		2.26*	2.28*	2.89**	3.15**	4.80***	3.96***	3.51***

TABLE 2A Reflects the TOTAL MEAN ITBS percentiles that were derived from converting the mean NCEs for the E-5 and Comparison Groups for Combined Cohorts 3-6. E-5's consistently have higher means all at or above statistical significance of .05. See Appendix 2A for an analysis of each Cohort. See Appendicies1A-1D for a more comprehensive statistical analysis. *P=.05, **P=.01 ***P=.001 for NCE means.

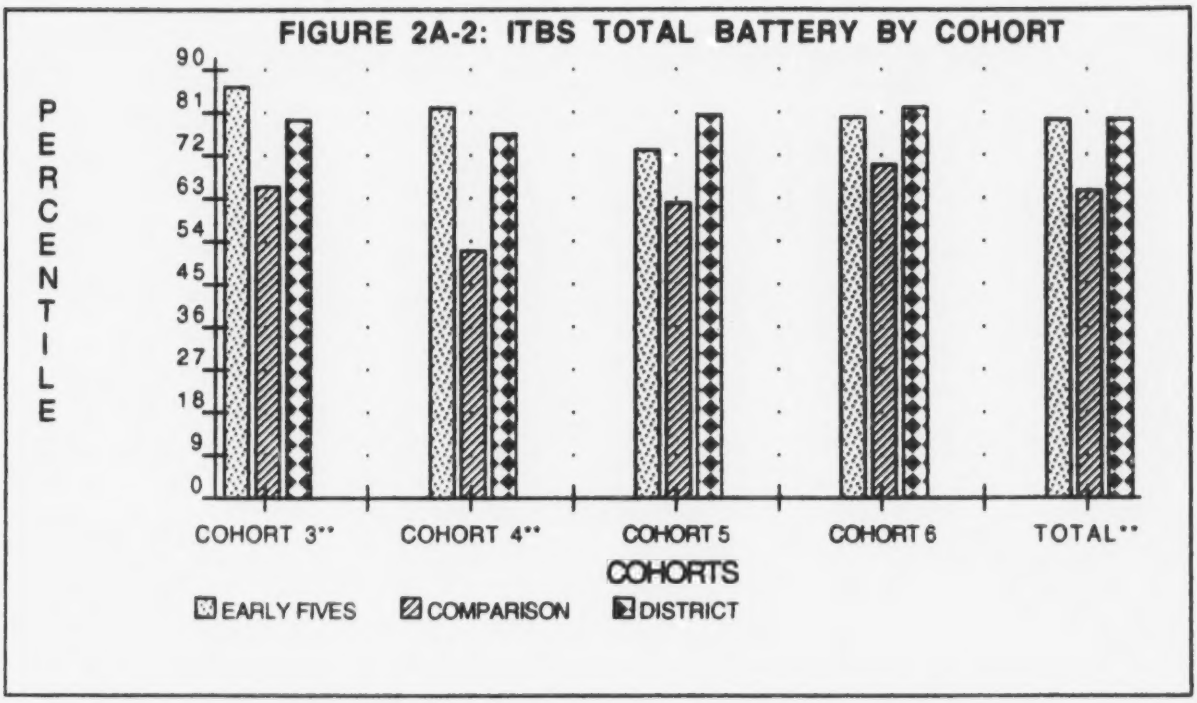

TABLE 2A-2 IOWA TEST OF BASIC SKILLS (ITBS) TOTAL BATTERY MEAN PERCENTILES FOR COHORTS 3-6 MATCHED FOR GESELL RATIO AND GENDER

	COHORT 3**	COHORT 4**	COHORT 5	COHORT 6	TOTAL**
N	(9)	(9)	(17)	(38)	(73)
EARLY FIVES	86.11	81.55	72.40	79.29	79.03
COMPARISON	65.21	51.33	61.29	69.29	63.66
DISTRICT	79.0	75.9	79.90	81.50	79.18
PAIRED T TEST	3.48**	3.42**	0.94	1.86	3.51**

TABLE 2A-2 Reflects the ITBS TOTAL BATTERY percentiles for each Cohort that were derived from converting the mean NCEs for the E-5 and Comparison Groups. E-5's consistently have higher means with statistical significance of .05 or greater for Cohort 3 & 4. See Appendix 2A for an analysis of each Cohort. See Appendicies 1A-1D for a more comprehensive statistical analysis. *P=.05. **P=.01 for NCE means.

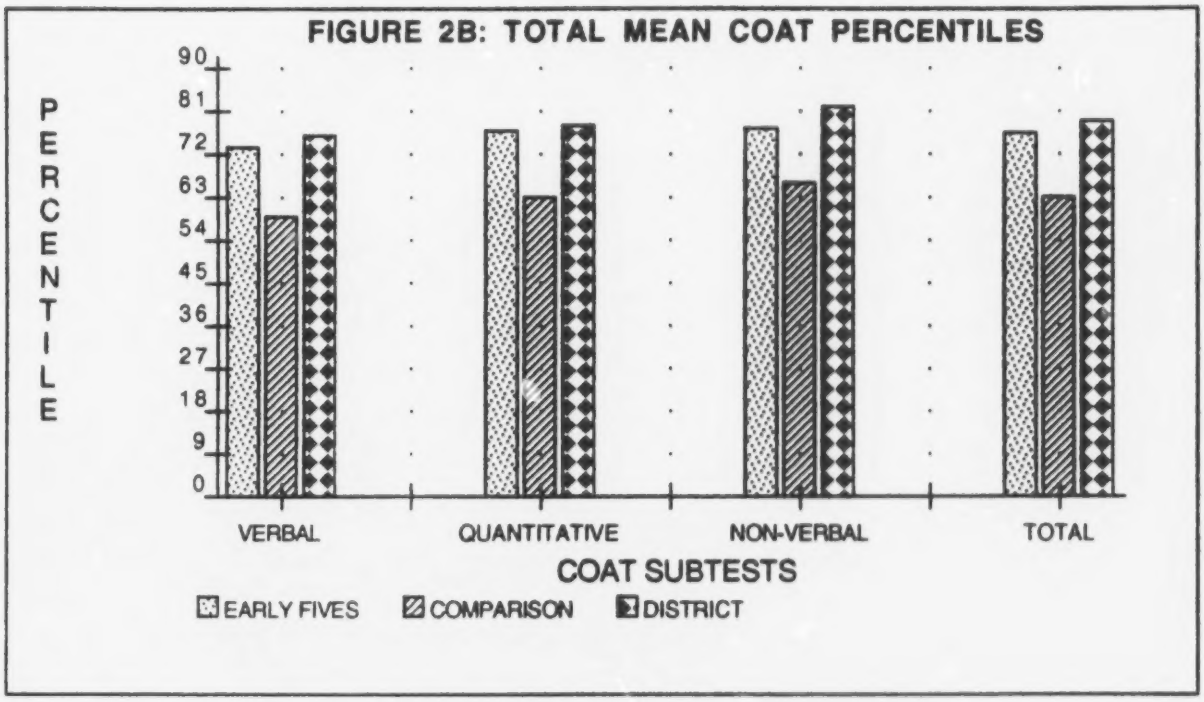

TABLE 2B COGNITIVE ABILITIES TEST TOTAL MEAN PERCENTILES FOR ALL COHORTS 3-6 MATCHED FOR GESELL RATIO AND GENDER

	N	VERBAL	QUANTITATIVE	NON-VERBAL	TOTAL
EARLY FIVES	73	73.23	76.58	76.88	75.89
COMPARISON	73	58.45	62.37	65.63	62.48
DISTRICT	3055	75.43	77.69	81.61	78.57
PAIRED T TEST		3.07**	3.61***	2.74**	3.58**

TABLE 2B Reflects the TOTAL MEAN COAT percentiles that were derived from converting the mean NCEs for the E-5 and Comparison Groups for Combined Cohorts 3-6. E-5's consistently have higher means at or above statistical significance of .05. See Appendix 2B for analysis of each Cohort . See Appendicies1A-1D for a more comprehensive statistical analysis. *P=.05, **P=.01 ***P=.001 for NCE means.

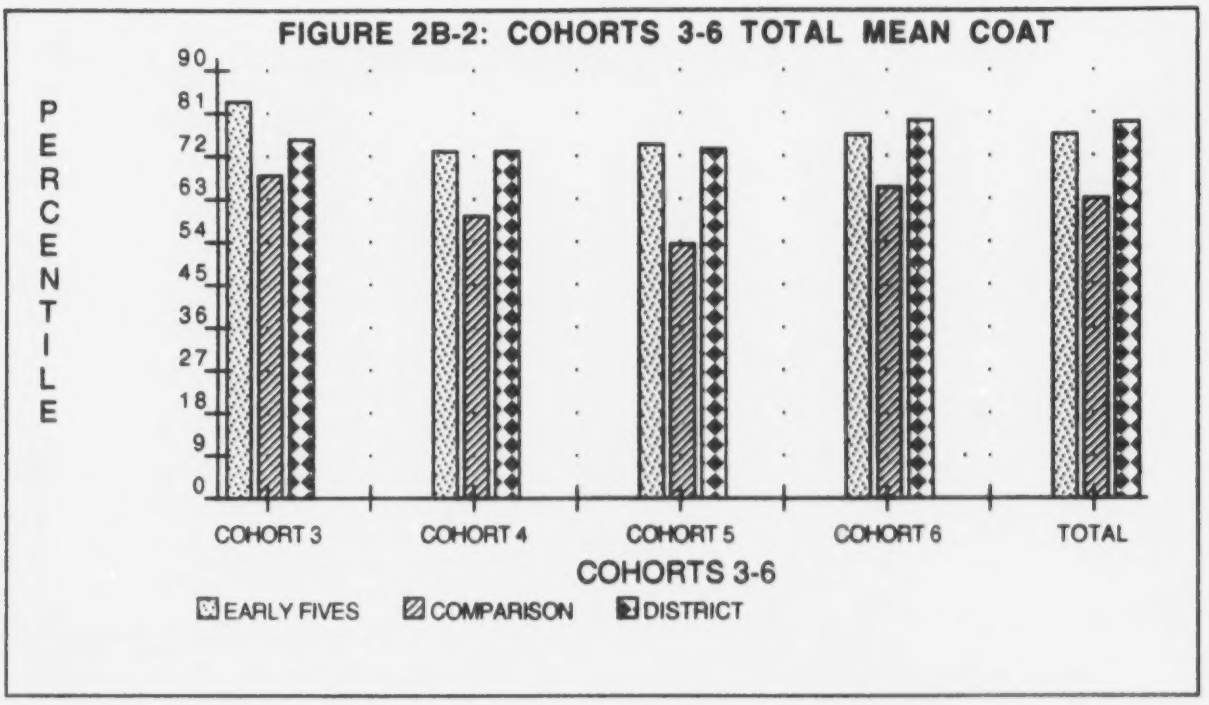

TABLE 2B-2: COGNITIVE ABILITIES TEST TOTAL MEAN FOR EACH COHORT MATCHED FOR GESELL RATIO AND GENDER

	COHORT 3	COHORT 4	COHORT 5	COHORT 6	TOTAL
N	9	9	17	38	
EARLY FIVES	82.86	72.33	73.82	75.95	75.89
COMPARISON	67.70	58.89	52.94	65.13	62.48
DISTRICT	75.00	72.43	72.87	78.83	78.57
PAIRED T TES	2.52*	1.29	1.93	2.17	3.58**

TABLE 2B-2 Reflects the TOTAL MEAN PERCENTILE for each Cohort 3-6 and the total for all Cohorts combined. The Early Fives have higher Total Means for all Cohorts but only Cohort 3 is at the .05 level. *P=.05 **P=.01

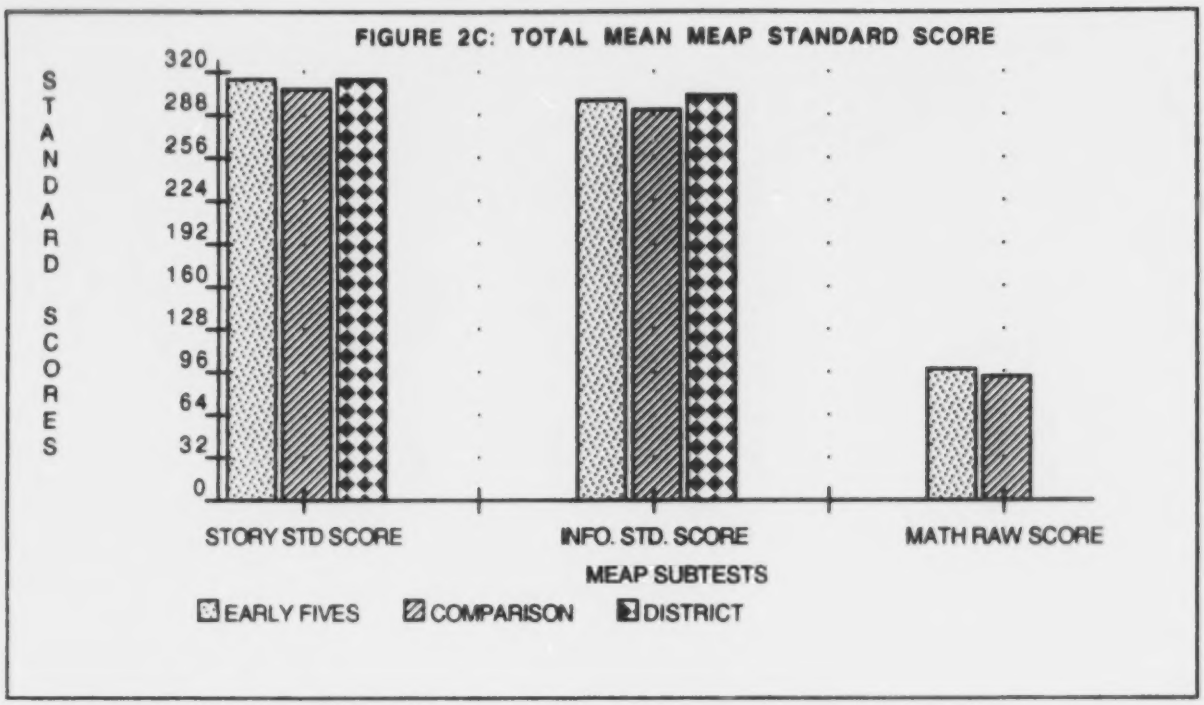

TABLE 2C: MEAP TOTAL MEANS FOR COHORTS 3, 5 & 6 MATCHED FOR GESELL RATIO AND GENDER

	N	STORY STD SCORE	INFO. STD. SCORE	MATH RAW
EARLY FIVES	35	312.17	296.40	95.90
COMPARISON	35	306.43	290.00	90.70
DISTRICT	1171	312.05	301.23	NA
PAIRED T TEST		1.05	1.35	1.63

TABLE 2C Reflects the TOTAL MEAN MEAP Reading Standard Scores and Math Objectives for E-5 and Comparison Groups. Farmington District MEAP reading means are also presented. The Mean number of Math objectives was not available for the District. Although the E-5's have slightly higher means on all three MEAP subtests, none of the differences are significant to the .05 level of probability. See Appendix 2C for analysis of each Cohort. See Appendicies 1A-1D for a more comprehensive statistical analysis.

MEAP aggregate total for the Cohorts 3-6 reflect only a total of 35 paired scores actually located thus reducing the power of statistical analysis. Although the E-5s were found to have a minimal edge over the Comparison on all subtests as reflected in Table 2C (Page 20), none of these differences were statistically significant at the .05 level. However, the Math raw score difference of 5 points with a mean of 95.90 for the E -5s and 90.70 for the Comparison Group approached significance with a T value of 1.63. Given this MEAP math finding it is of interest to note that the most significant differences were found for quantitative tests of the ITBS and the COAT. Appendices 2C (Page 49) and 1A-1D further reflect no significant MEAP differences when analyzing individual Cohorts.

In analyzing the ITBS test dates, Table 3 (Page 22) reflects that 43 of the 115 unmatched aggregate of the Comparison children (37.39%) had been held back a year. There were only 4 of the 136 unmatched aggregate of the E-5s or 2.94% who took the test a year later than expected. This reflects that more than 12 times as many Comparison children were held back. This finding is consistent for each Cohort analyzed. All differences were found to be statistically significant at the .05 level using a Chi Square analysis.

The analysis of the Learning Center data as reported in Table 4A (Page 23) reveals that 26 of the 73 matched Comparison (35.67%) received remedial reading service as compared with 13 of the 73 matched E-5s (17.81%). This represents twice as many Comparison children receiving Learning Center service as compared to the E-5 children which was found to be statistically significant at the .05 level. Although there is variation between Cohorts, there were fewer E-5s receiving service than Comparisons in every Cohort.

There was a insignificant 2% difference between the two groups participation in Special Education. As reflected in Table 4B (Page 24), 12.50% of the Comparison Group received Special Education service as compared with 14.58% of the Early Fives.

As reflected in Table 5 (Page 26) the aggregate percent of E-5s for Cohorts 3-6 was higher than the Comparisons for High Achievement and lower for needs improvement for Reading, Math, and Behavior. Both Reading and Math High Achievement were found to be significantly higher for the E-5s (82% Reading and 81% Math) than the Comparisons (51.7% Reading and 58.6% Math). The reading percent difference was significant at the .001 level and the Math difference was significant at the .05 level.

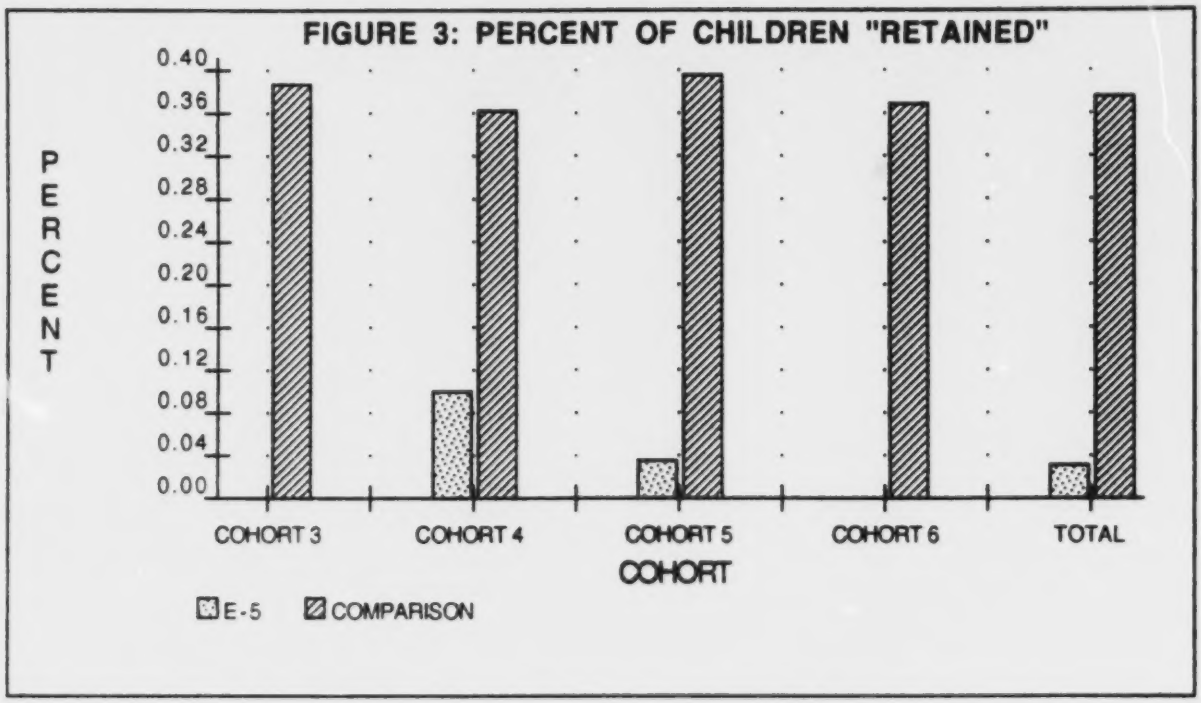

TABLE 3: NUMBER OF CHILDREN WITH ITBS TEST DATE ONE YEAR LATER THAN EXPECTED

	1982-83			1983-84			1984-85			1985-86			TOTAL		
	N	LATE TEST	% OF TOTAL	N	LATE TEST	% OF TOTAL	N	LATE TEST	% OF TOTAL	N	LATE TEST	% OF TOTAL	N	LATE TEST	% OF TOTAL
E-5	27	0	0.00%	#	3	9.68%	31	1	3.23%	47	0	0.00%	136	4	2.94%
COMPARISON	13	5	38.46%	#	9	36.00%	28	11	39.29%	49	18	36.73%	115	43	37.39%
CHI SQUARE			8.61**			4.24*			9.69**			18.91***			46.03***

Table 3: Presents the number and percent of children from E-5 's and Comparison Groups for Cohorts 3-6 and TOTAL for which ITBS data was located and was found to have been administered one year later than normally expected. These children were either retained or held out of school for another year before enrolling.

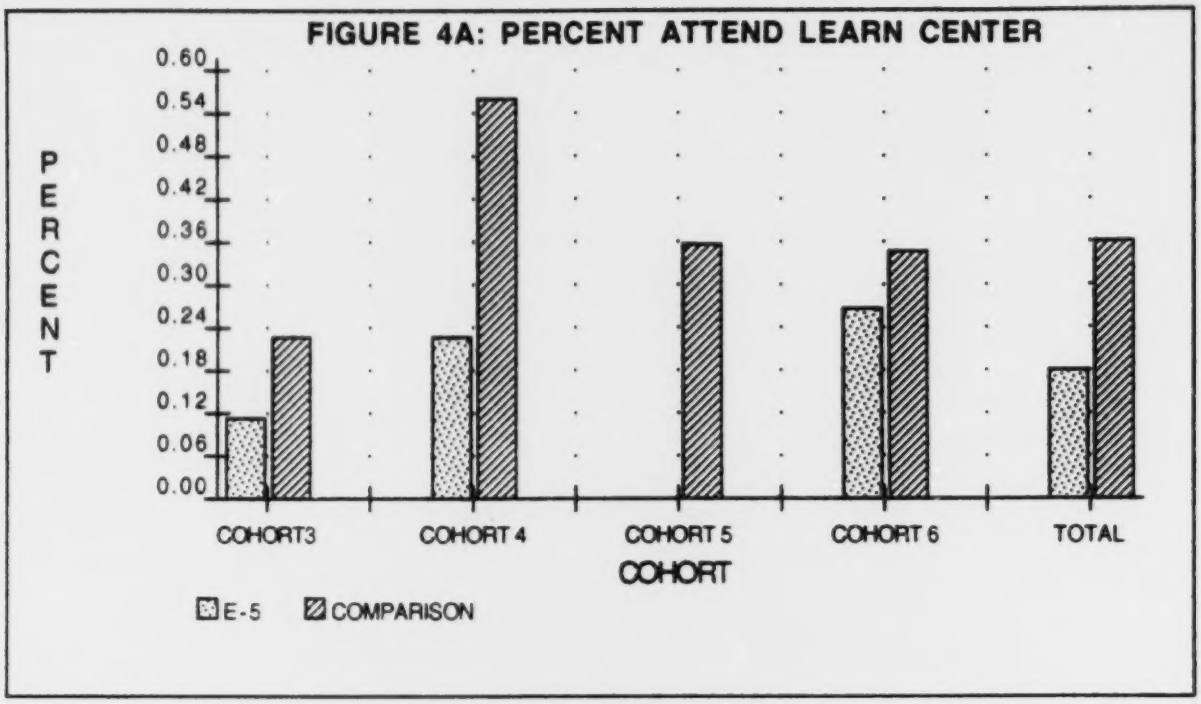

TABLE 4A: NUMBER OF CHILDREN WHO HAVE ATTENDED REMEDIAL LEARNING CENTER PROGRAM

	COHORT 3			COHORT 4			COHORT 5			COHORT 6			TOTAL		
	N	LC #	% OF TOTAL	N	LC #	% OF TOTAL	N	LC #	% OF TOTAL	N	LC #	% OF TOTAL	N	LC #	% OF TOTAL
E-5	9	1	11.11%	9	2	22.22%	17	0	0.00%	38	10	26.32%	73	13	17.81%
COMPARISON	9	2	22.22%	9	5	55.56%	17	6	35.29%	38	13	34.21%	73	26	35.62%
CHI SQUARE															5.04*

TABLE 4A: Presents the number and percent of children from E-5 's and Comparison Groups for Cohorts 3-6 and combined TOTAL who Learning Center teachers identified as receiving or having received remedial assistance. 35.26% of the TOTAL combined Comparison group received Learning Center remedial assistance as compared with 17.81% of Total Early Fives. *P=.05

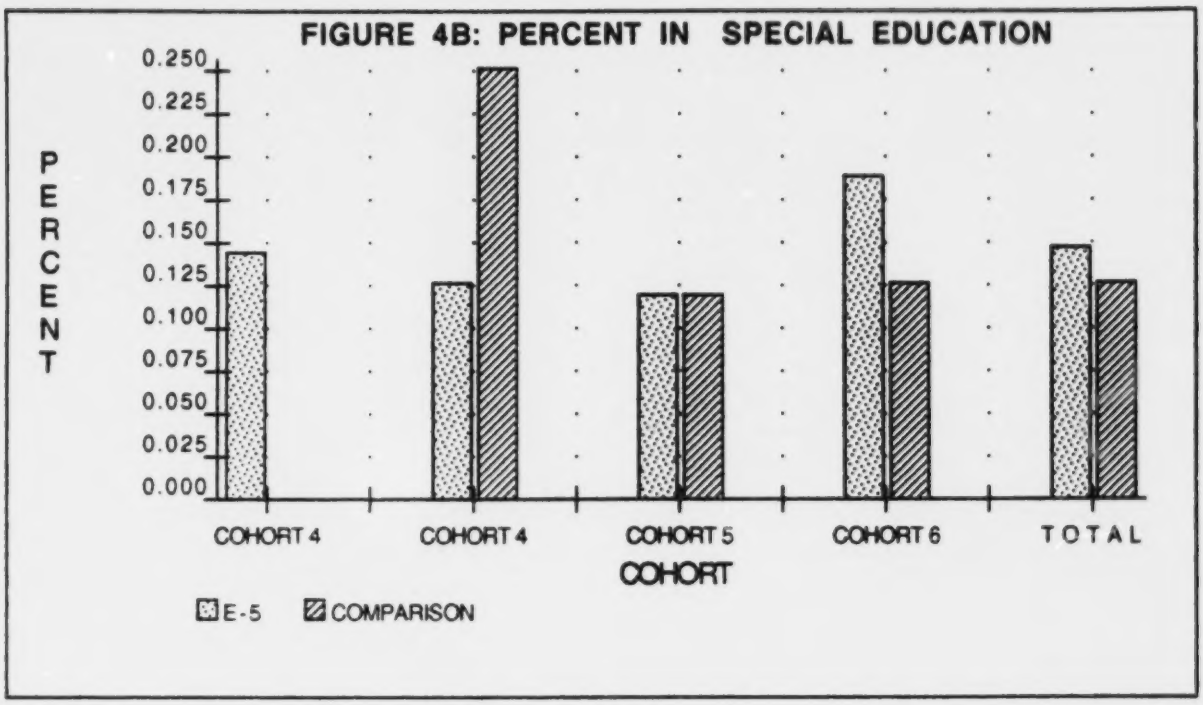

TABLE 4B: NUMBER OF MATCHED CHILDREN IN REPORT CARD STUDY CERTIFIED SPECIAL EDUCATION

	COHORT 3			COHORT 4			COHORT 5			COHORT 6			TOTAL		
	N	SP. ED.	% OF TOTAL	N	SP. ED	% OF TOTAL	N	SP. ED	% OF TOTAL	N	SP. ED	% OF TOTAL	N	SP. E	% OF TOTAL
E-5	7	1	14.29%	8	1	12.50%	17	2	11.76%	16	3	18.75%	48	7	14.58%
COMPARISO	7	0	0.00%	8	2	25.00%	17	2	11.76%	16	2	12.50%	48	6	12.50%

TABLE 4B: Presents the number and percent of children from MATCHED E-5 's and Comparison Groups for Cohorts 3-6 for which Report Cards were located and were found to be receiving Special Education support. There was only an insignificant 2% difference between the Comparison and Early Fives receiving Special Education services. 12.50% and 14.58% respectively.

The E-5s were also found to have a higher percent "Contributing to Discussion" than the Comparisons as evidenced in Table 5A for Cohorts 3-6 aggregate percent of 46.67% for the E-5s as compared with 23.33% for the Comparisons. In analyzing each Cohort, E-5s had a substantially higher percent than the Comparisons in every Cohort except Cohort 6. This aggregate total percent difference was significant at the .05 level (P 27).

An analysis of the mean number of marks received in each category for the aggregate of Cohorts 3-6 as presented in Table 5B (Page 28) reflects higher means for the E-5s but none of them statistically significant. However Reading High Achievement did approach significance with a P value of .06.

Appendix 5A and 5B (Page 54-55) presents an analysis of the means for each report card category for each Cohort. Significant differences were found for only Cohort 5. It is of interest, but not statistically significant, to note that all of the Comparisons means for Cohort 6 were slightly better than the E-5s. The Behavior Needs Improvement Comparison mean of 4.41 compared with the E-5 mean of 8.00 reflected the greatest difference for Cohort 6.

Analysis of the 7th grade reports cards for Cohort 3 as presented in Table 6 (Page 29) reflects that the E-5s first Semester mean GPA of 3.5 for Language Arts and 3.07 for Math as compared to the Comparisons 2.64 and 2.36 respectively were significantly higher. First Semester Attendance was also significantly better for E-5s with a mean absence of 1.57 days as compared with the Comparison of 6.45 days.

A summary of key questions on the 1988 and 1991 Follow-up Parent Surveys is reported in Table 7 (Page 31). An overwhelming 93.50% of parents in the 1988 survey and 98% of the parents in the 1991 phone survey responded positively to the value of the program and that it was the right decision for their child. Only 1 parent responded negatively to question 1 and 7.

There was a very high positive percent, 89.3% of the 1988 survey and 91.7% of the 1991 phone survey of parents who reported positive effects as summarized in questions 2, 4, and 6 and reported in Table 7. See Appendix 3 for a detailed analysis of the percent of parents responding to each category to questions 3 and 5. It is of interest to note that 25% of the parents in the Phone Survey indicated their child was in the Gifted Program and 58% were functioning above grade level.

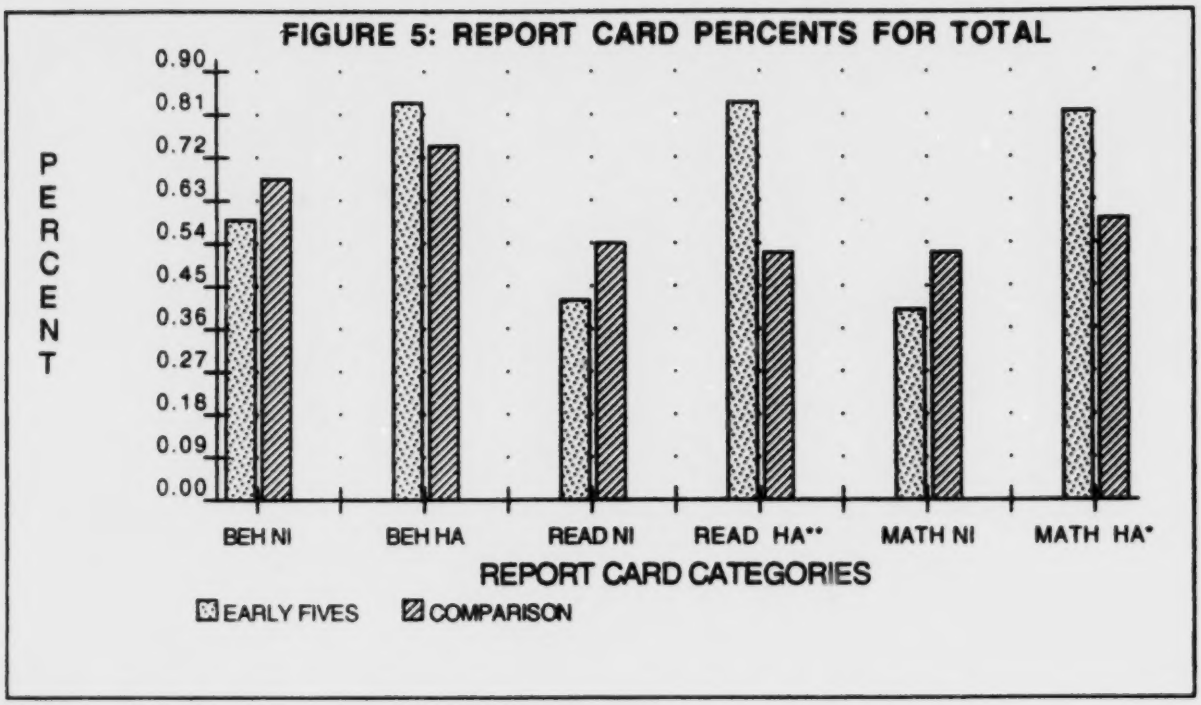

TABLE 5 TOTAL MEAN PERCENT OF NEEDS IMPROVEMENT AND HIGH ACHIEVEMENT ON 3RD GRADE REPORT CARDS FOR ALL COHORTS COMBINED.

N=58

	BEHAVIOR NEEDS IMPROVE	BEHAVIOR HIGH ACHIEVE	READING NEEDS IMPROVE	READING HIGH ACHIEVE	MATH NEEDS IMPROVE	MATH HIGH ACHIEVE
EARLY FIVES	58.60%	82.80%	41.40%	82.80%	39.70%	81.00%
COMPARISON	67.20%	74.10%	53.50%	51.70%	51.70%	58.60%
CHI SQUARE				11.31***		5.89*

TABLE 5: Reflects the Total Percent of Early Fives and Comparison groups for all Cohorts combined receiving check marks on report cards for Needs Improvement and High Achievement. See Appendix 5 A & 5B for an analysis of means by Cohort.

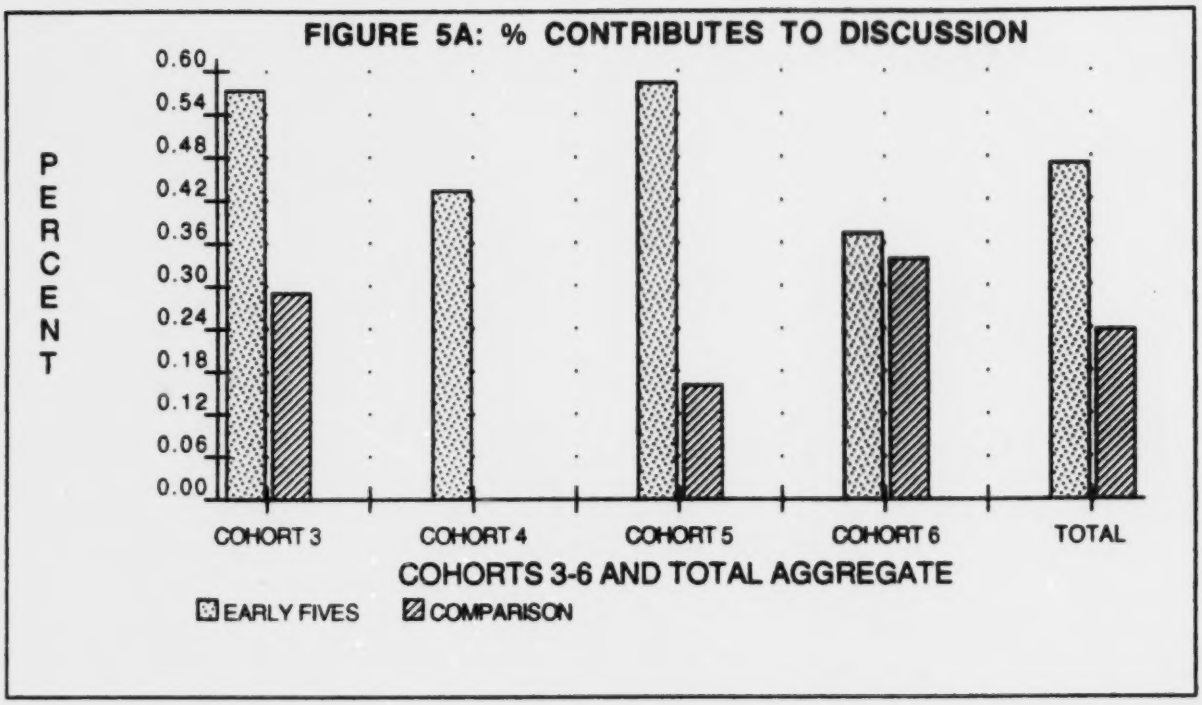

TABLE 5A: PERCENT OF HIGH ACHIEVEMENT ON "CONTRIBUTES TO DISCUSSION" ON 3RD GRADE REPORT CARDS FOR EACH COHORT 3-6 AND ALL COHORTS COMBINED.

	COHORT 3	COHORT 4	COHORT 5	COHORT 6	TOTAL
N	7	7	19	27	60
EARLY FIVES	57.14%	42.86%	57.89%	37.04%	46.67%
COMPARISON	28.57%	0.00%	15.79%	33.33%	23.33%
CHI SQUARE					6.19*

TABLE 5A: Reflects the Percent of Early Fives and Comparison groups for each Cohort 3-6 and theTotal Aggregate who had High Achievement on "Contributes to Discussion" for BOTH Science and Social Studies. There are the only two areas on the report card rating this behavior.

TABLE 5B: COHORTS 3-6 REPORT CARD TOTAL AGGREGATE

	GROUP	N	MEAN	S.D.	F	T	
READING NEEDS IMPROVEMENT	E-5	58	2.60	4.3			
	C	58	3.43	4.9	1.30	1.04	
READING HIGH ACHIEVEMENT	E-5	58	8.40	10.2			
	C	58	5.07	7.9	0.60	-1.86	(P=.06)
MATH NEEDS IMPROVEMENT	E-5	58	3.04	5.8			
	C	58	2.98	5.1	0.77	0.00	
MATH HIGH ACHIEVEMENT	E-5	58	10.77	11.4			
	C	58	9.17	14.0	1.51	-0.98	
BEHAVIOR NEEDS IMPROVEMENT	E-5	58	5.41	8.6			
	C	58	5.21	6.6	0.60	0.15	
BEHAVIOR HIGH ACHIEVEMENT	E-5	58	15.83	13.8			
	C	58	12.76	14.4	1.08	1.25	
ATTENDANCE	E-5	58	7.00	4.6			
	C	58	7.07	7.3	2.52	0.06	

TABLE 5B: Reflects the Mean, Standard Deviation (S.D.), F Value, and T Value of "Needs Improvement" and "High Achievement" marks on third grade report cards for Reading, Math Behavior and Attendance for the Early -5 and Comparison Groups for the Total Aggregate of Cohorts 3-6. The respective F value and T value for each Paired Mean is reflected to the right of the Means. Reading High Achievement was the only measure approaching significance.

TABLE 6: COHORT 3 SEVENTH GRADE REPORT CARD

	GROUP	N	MEAN	S.D.	F	T
LANG. ARTS GRADE POINT AVERAGE	E-5	7	3.5	0.58		
	C	7	2.64	0.69		
					0.7	4.40**
MATH GRADE POINT AVERAGE	E-5	7	3.07	0.79		
	C	7	2.36	1.03		
					1.24	3.21*
LANG. ARTS EFFFORT	E-5	7	1.71	0.70		
	C	7	1.86	0.63		
					1.24	0.40
LANG. ARTS CITIZENSHIP	E-5	7	1.57	0.34		
	C	7	1.86	0.75		
					0.21	0.90
MATH EFFORT	E-5	7	1.86	0.69		
	C	7	1.79	0.76		
					0.83	0.19
MATH CITIZENSHIP	E-5	7	1.71	0.81		
	C	7	2.29	0.76		
					1.15	1.14
ATTENDANCE	E-5	7	1.57	1.53		
	C	7	6.64	6.45		
					0.06	-2.37*

TABLE 6: Reflects the Mean, Standard Deviation (S.D.), F Value, and T Value of Language Arts and Math GPA and Behavior and Attendance for First Semester 7th gradeReport Cards for the Early -5 and Comparison Groups for Cohort 3 children now in 7th grade . The respective F value and T value for each Paired Mean is reflected below the Mean.

GPAs A=4 B=3 C=2 D=1 E=0
BEHAVIOR : 1=OUTSTANDING 2=GOOD 3=SATISFACTORY 4=POOR 5=CONFERENCE NEEDED

The Staff Survey as summarized in Table 8A (Page 32) reflects the adjusted percent of staff who responded positively or negatively and excludes the staff responding Don't Know (DK). Table 8A reflects that an adjusted 94.03% of staff responded positively to the value of the program as compared with only an adjusted percent of 5.53% responding negatively.

Table 8B (Page 33) reflects the actual unadjusted percent of responses to each category for each question. Note that in this analysis, when including the large number (14.4%) of DK responses largely from the 2nd and 3rd grade staff, only an actual 70% positive response is observed.

Appendix 4B and 4C (Page 52-53) reflects an analysis of the responses by assignment. It is of interest to note that the higher the teachers grade level the less sure staff is of the District's progress with developmentally appropriate practices. For example 39.1% of the 3rd grade and 21.7% of 2nd grade and only 11% of 1st grade and 4% of kdg. teachers responded DK to how well the District was progressing with developmentally appropriate practices.

It is interesting to note that 56.5% of the 3rd grade teachers responded DK to their own progress with developmentally appropriate practices. In contrast 0% of the PreK and Kdg. teachers responding DK with 100% and 96.3% respectively indicating they felt they had made 75 to 100% progress in implementing developmentally appropriate practices.

As further reflected in Table 8B, only 37.6% of staff indicated an awareness of the alleged negative effects of E-5 programs cited in the professional literature.

68.7% of staff indicated they felt that the E-5 program helped them maintain high academic standards in their classroom.

TABLE 7: PERCENT OF POSITIVE PARENT RESPONSES

QUESTIONS	1988 PARENT MAILED SURVEY N=147 PERCENT RESPONSE CATEGORIES YES	NO	?	1991 PARENT PHONE SURVEY N=24 PERCENT RESPONSE CATEGORIES YES	NO	?
1. BENEFICIAL TO CHILD	94	1	5	100	0	0
7. RIGHT DECISION TO BE IN E-5	93	1	5	96	0	4
AVERAGE % POSITIVE ABOUT PROGRAM	93.50%			98%		
2. CHILD SUCESSFUL IN KDG.	92	5	3	88	4	4
4. CURRENTLY WORKING AT/ABOVE GRD	94	-	-	87	-	-
6. SUCESSFUL FEELINGS ABOUT SELF	82	-	-	100	-	-
AVERAGE % POSITIVE EFFECTS	89.3%			91.7%		

TABLE 7: Reflects the percent of parents responding POSITIVE to select questions on the Parent Survey of 1988 (mailed to all former participants) and on the 1991Parent Phone Survey (sample of 24 Children from Cohort 3, all but 2 now in 7th grade). The number of children of the respondents to the 1988 Survey were in the following grades : KDG=66 1ST=33 2ND=3 3RD=20 4TH=23 5TH=2
See Appendix 4 for complete analysis

TABLE 8A: PERCENT OF STAFF RESPONDING POSITIVELY OR NEGATIVELY (EXCLUDING DON'T KNOW RESPONSES)

QUESTIONS	POSITIVE REPONSE ADJUSTED N	POSITIVE REPONSE ADJUSTED PERCENT	NEGATIVE RESPONSE ADJUSTED N	NEGATIVE RESPONSE ADJUSTED PERCENT
3. E-5 SOCIALLY ADJUSTED	101	96.0%	4	3.8%
4. E-5 ACADEMICALLY ADJUSTED	100	96.0%	4	3.8%
8. VALUABLE PROGRAM FOR CHILDREN	101	90.1%	10	9.0%
AVERAGE %		94.03%		5.53%

TABLE 8A: Reflects the number and adjusted percent of staff responding Positively or Negatively to select questions on the Staff Survey. From 14.4 to 23 percent of the teachers responded don't know to these questions. This table excludes the Don't Know resposes and adjust the percent to reflect those staff responding other than Don't Know. The Don't Know reponse occurred more frequently for teachers in later grades . For Example: 52% of third grade teachers marked Don't Know to question 4. See Appendix 4 a-c for a complete analysis.

TABLE 8B: OVERALL PERCENT OF POSITIVE AND NEGATIVE RESPONSES ON STAFF SURVEY

QUESTIONS	RESPONSE CATEGORIES 1	2	3	4	5	TOTAL NEGATIVE PERCENT*	TOTAL POSITIVE PERCENT*	
3. E-5 SOCIAL ADJUSTMENT	21.1	0.0	3.0	48.1	27.8	3.0	75.9	**
	?	-	-	+	+			
4. E-5 ACADEMIC ADJUSTMENT	23.1	0.0	3.1	50.0	23.8	3.1	73.8	
	?	-	-	+	+			
5. E-5 PRGM HELP MAINT HIGH ACADEMIC	26.2	1.6	4.0	34.1	34.1	5.6	68.2	
	?	-	-	+	+			
6. K-2 TCHRS ACCOMD. E-5 IF ELIMINATE	6.8	7.6	12.9	45.5	27.3	20.5	72.8	
	?	-	-	+	+			
7. OBSERVABLE E-5 CHARACTERISTICS	14.5	21.4	30.5	19.8	13.7	21.4	64.0	**
	?	-	+	+	+			
8. VALUE OF E-5 PROGRAM	14.4	7.6	9.1	28.0	40.9	7.6	78.0	
	?	-	+	+	+			
9. READ OR HEARD OF NEG. EFFECTS	33.1	29.3	23.3	12.0	2.3	62.4	37.6	
	-	-	+	+	+			
10. YOUR PROGRESS WITH DEVEL. APPR0PT	14.4	5.3	13.6	28.8	37.9	18.9	66.7	**
	?	-	-	+	+			
11. K-2 PROGRESS WITH DEVEL. APPR0PT.	17.4	10.6	25.0	28.0	18.9	35.6	46.9	
	?	-	-	+	+			

TABLE 8B: The columns on the right side of the table reflect the total percent of the negative and positive resposes for each question. The response categoreis reflect the actual percentage of responses for each question. See footnote below for explanation of how the negative and positive percents were calculated for each question. See Appendix for actual survey instrument.

* For questions 1-6 and 10-11 negative is the sum of categories 2+3. Positive is the sum of categories 4+5. For questions 7 and 8 negative is category 2 only and positive is the sum of categories 3+4+5. For question 9 negative is the sum of categories 1+2 and positive is the sum of categories 3+4+5.

** The relationship between teaching assignment and reponses to questions 3, 7 & 10 revealed highly significant Chi Square values beyond the .0001 level see Appendix 5 B & C for an analysis of reponses by staff assignment.

SUMMARY OF FINDINGS

A total of ten (10) different instruments were employed to compare four Cohorts of children attending the Early Fives Program from 1982-86 with a matched comparison group of children for each Cohort who were also recommended to attend the E-5 program but did not attend. Eight (8) of the ten (10) measures clearly revealed significant differences in favor of the Early Fives Children.

The Early Fives Program Children from each of the four Cohorts studied were consistently found to have higher scores on all subtests of the three academic measures employed (ITBS, COAT & MEAP). When aggregating the data for the four Cohorts, all subtests of ITBS and COAT consistently revealed statistically significant differences in favor of the Early Fives. Only small insignificant differences were found on the MEAP subtests.

The Early Fives were found to have 12 times fewer retentions and 2 times fewer remedial reading services than the Comparison group. Both of these measures were statistically significant. However, essentially no difference was found between the two groups for the number receiving Special Education services.

The Early Fives were found to have a significantly higher percent of children receiving High Achievement marks on the 3rd grade report card for Reading, Math and Contributes to Discussion. Likewise, the Early Fives had significantly better attendance and higher grade point averages than the Comparisons for both Language Arts and Math on the 7th grade reports cards.

Two separate parent surveys consistently indicated that Parents were extremely positive about the value of the program even eight and half years later when the children were in 7th grade. The Prekindergarten through 3rd grade staff and elementary principals were also found to be very positive in their assessment of the program.

DISCUSSION

The highly positive findings of this study are in stark contrast to those cited by Shepard and Smith. Some possible explanations for the consistently positive results from this multi-method multi measure longitudinal study as compared to other studies are listed below:

- The higher income level of the Farmington general population
- The higher mean performance (80%ile) of the general school population and subsequent highly competitive academic climate.
- A resulting population of Early Fives with considerable potential.
- The highly sophisticated, well supervised team screening process.
- The extensive involvement of parents in the screening and decision process.
- The high quality, developmentally appropriate curriculum in conjunction with the well trained staff, aide support, small class size (15) and excellent supervision of administrators trained in early childhood education.
- The non-tracking, flexible exit and progression policies employed.
- The large heterogeneous number of children provided the opportunity, thus lessening the chance of negative stigma.
- The extensive longitudinal nature of the evaluation design and data base, coupled with the multi-method and multi-measurement analyses employed.

If the negative stigma factor of failure could be avoided, as they appear to be in Farmington, it only makes sense that an extra year before kindergarten in a developmentally appropriate program would substantially elevate norm referenced test measures as the scores for these children will be compared with children and norms a year younger. The fact that such a large number of previous studies reporting insignificant and negative findings is surprising. One variable may be the way in which the parent and subsequently the child perceives the extra year. It may be that lower income and minority families perceive the need for an extra year as a failure-something "wrong" with their child. Whereas middle income and upper income families may view the extra year offering as an opportunity for growth with the "gift of time goal" clearly in focus. It is of interest that Sam Meisels, a strong opponent of all extra year programs, has acknowledged that "it is possible that middle and upper-income students who have been held out will form a subgroup of overage students who will not be at risk for dropping out in the same way as other

sudents, but this is yet to be demonstrated" (Meisels, 1991).

It may also be that middle and upper income parents who freely choose to enroll their child may be more child centered and have an abundance of developmentally appropriate family centered practices. In contrast, lower income families may actually have felt pressured into enrolling their children and consequently felt something was wrong with their child to need a special intervention. Whatever the factors it appears that extra year programs, even those provided before kindergarten, are not as successful for predominantly lower income children. Meisels cites research by Eads where "black males placed in Junior Kindergarten scored twice as much lower, with a twelve point margin between them and their one-year counterparts" (Meisels, 1991).

There may also be a greater likelihood in lower income settings that the screening process resulted in the Early Fives classes being more of a homogeneous track of lower ability children thus inhibiting the overall group performance educational effectiveness of the program. Likewise, financial limitations in lower income settings may limit the overall quality of the programs components such as small class size, highly trained well supervised staff etc., thus further limiting its effectiveness.

Meisels also contends that extra year programs have resulted "from pressures placed on kindergarten teachers to implement academically oriented programs in order to prepare children for the heavy academic emphasis seen in most first through third grades" (Meisels, 1987, p72). Shepard and Smith maintain that the trend to retain more and more kindergarteners (they view Early Fives as a form of retention) in the 1980's can be directly linked to the increasingly narrow, worksheet-driven kindergarten curriculum motivated by teachers' fears of accountability testing in the next grades (Shepard, 1990). Even James Uphoff, a strong advocate of transition programs, has maintained that transition grades would not be necessary if curriculum were appropriate (Uphoff, 1990).

One of the main objections presented by Sue Bredekamp (Executive Director of the National Association of the Education of Young Children and an avid opponent of transition programs) against Early Fives and similar transition programs is that although they may protect the few children assigned to the class the other children "remain in the stressful and/or boring environment that is typical of regular first grade. Removing

all the "developmentally young" boys from the class makes it easier to require the remaining children to sit and do paperwork for longer periods of time". She concludes that "the need for transition classes is symptomatic of the larger problem of inappropriate curriculum in the primary grades" (Bredekamp, 1990, p. 20-21). A major concern of Bredekamp is that the transition classes serve to take the pressure off teachers to move toward more developmentally appropriate practices in their classrooms.

In contrast to Bredekamp's position Uphoff maintains that, as educational change is an extremely slow process, one in which it could take years to implement the complex practices of developmentally appropriate instruction, well designed transition programs can greatly reduce the needless suffering of "unready" children. He further maintains that "such programs can actually help speed the move to developmentally appropriate practice by demonstrating how well the approach works" (Uphoff, 1990a p. 19).

RECOMMENDATIONS

- Given the highly positive findings of the Early Fives program and the absence of any negative effects, it is recommended that the program be continued and the quality components cited above be maintained as the District continues to work toward implementing developmentally appropriate practices in all primary grades .

- Continue to maintain an Early Fives data base and follow up on the existing and future Cohorts to monitor program effectiveness. Especially follow each Cohort into Middle and High School to determine if the positive effects are sustained. A potential five year data matrix is included in the final Appendix 9.

- Explore the relationship of the newly implemented Chapter 1 Prekindergarten program as well as the Headstart program with the Early Fives program and incorporate them into a longitudinal evaluation design. Attempt to assess if some E-5 children might be better served by the Prekindergarten program. Refine the screening process and attempt to determine which children benefit from one program over the other.

- The School District is to be commended for its outstanding effort to implement developmentally appropriate practices in grades PreK-3 and is strongly encouraged to continue this endeavor. It is obvious that much work is still needed to implement such a complex concept not only in the early grades, but appropriate practices need to be explored and encouraged K-12.

- Of particular concern is the questionable practice of retention. Over twenty years of research consistently portrays retention as an ineffective educational practice at best and a very damaging practice at worst.

    - The District is strongly encouraged to continue to review the policies and procedures regarding retention as well as to collect longitudinal data on effected students to determine if the same negative effects exist as in national studies and to make appropriate adjustments accordingly.

- For developmentally appropriate practices to be implemented and be effective in the early grades it is imperative that all levels and aspects of the curriculum be appropriate and authentic. In implementing developmentally appropriate practices a major area of concern is with measurement. Far too much emphasis has been placed on standard achievement testing to assess student progress and program effectiveness. These tests have an appropriate use but have been overused and fallen into the misuse of driving the curriculum into one of trivial pursuit rather than higher order thinking, problem solving, team cooperation skills for collaborative problem solving etc.

    - The District is strongly encouraged to continue to explore Alternative Authentic Assessment procedures for all aspects of the curriculum Prekindergarten-Grade12 as advocated by Grant Wiggins and introduced to your staff in his February Seminars here in Farmington.

    - The District is encouraged to continue its investigation and pursuit of Outcomes Based Education especially the Transformational Outcomes Based Educational Model of Bill Spady.

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APPENDIX 1A: COHORT 3 1982-83 PAIRED "T" TEST

	GROUP	N	MEAN	S.D.	S.E.	SKEWI	KURTO	MEAN DIF.	S. D.	T VALUE PAIRED	T PROB	GESELL CORRELATION
5TH GD ITBS	E-5	9	69.66	11.45	3.82	-1.25	1.91	12.33	15.47	2.39	0.044	0.18
VOCAB. NCE	C	9	57.33	15.52	5.17	-0.68	0.003					(cubes=.26*)
5TH GD ITBS	E-5	9	72.67	16.08	5.36	0.21	0.183	11.22	13.99	2.41	0.043	0.18
READ NCE	C	9	61.44	15.66	5.22	-0.47	-0.07					
5TH GD ITBS	E-5	9	65.66	15.78	5.26	1.23	1.68	7.55	15.92	1.42	0.192	0.19
MTH CNCPTS NCE	C	9	58.11	18.42	6.14	-1.18	1.585					(cubes=.31*)
5TH GD ITBS	E-5	9	67.55	11.29	3.76	0.61	1.06	4.77	15.79	0.91	0.391	0.22
MATH PROB. NCE	C	9	62.77	18.95	6.32	-0.81	-0.21					
5TH GD ITBS	E-5	9	70.55	15.5	5.17	-0.06	-0.68	16.00	23.14	2.07	0.072	0.07
COMPUTE NCE	C	9	54.55	17.69	5.89	-1.87	3.923					
5TH GD ITBS	E-5	9	69.11	14.09	4.69	1.01	2.06	10.44	14.91	2.10	0.069	0.21
TOT. MATH NCE	C	9	58.66	17.08	5.69	-0.91	-0.05					
5TH GD ITBS	E-5	9	73.11	13.74	4.58	0.27	1.51	14.77	12.75	3.48	0.008	.26*
TOT. BATRY. NCE	C	9	58.33	17.21	5.73	-1.00	0.42					(cubes=.31**)
5TH GD COAT	E-5	9	69.66	8.12	2.71	-0.93	1.22	15.22	16.79	2.72	0.026	0.10
VERBAL NCE	C	9	54.44	19.83	6.61	-0.70	-0.29					
5TH GD COAT	E-5	9	69.66	15.74	5.24	-0.69	0.11	2.77	12.11	0.69	0.511	0.21
MATH NCE	C	9	66.88	12.84	4.28	0.03	0.10					(cubes=.35**)
5TH GD COAT	E-5	9	68.44	11.7	3.9	-0.62	1.16	10.66	17.75	1.80	0.109	.25*
NON VERB. NCE	C	9	57.77	21.29	7.09	-0.01	-0.34					(cubes=.34**)
7TH GD. MEAP	E-5	7	318.28	24.14	9.12	-0.92	-0.08	11.43	20.35	1.49	0.18	.5311*
STORY SS	C	7	306.85	31.31	11.83	-0.91	1.31					(cubes=.64**)
7TH GD. MEAP	E-5	7	302.85	19.17	7.24	0.39	0.30	13.14	34.95	0.99	0.35	.6168*
INFO. SS	C	7	289.71	36.23	13.84	0.17	-0.14					(cubes= .73***)
7TH GD. MEAP	E-5	7	94.71	11.67	4.41	-1.58	3.26	7.00	8.66	2.14	0.07	.5598*
MATH OBJ	C	7	87.71	18.43	6.97	-1.58	1.70					

APPENDIX 1A

1982-83 COHORT 3 MEAN GESELL RATIO

EARLY-5 GROUP	
Mean	.94
sd.	.11

COMPARISON GROUP	
Mean	.93
sd	.11

* P=.05
** P=.01
*** P=.001

APPENDIX 1B: COHORT 4 1983-84 PAIRED "T" TEST

		N	MEAN	S.D.	S.E.	SKEWI	KURTO	MEAN DII	S. D.	T VALUE PAIRED	T PROB	GESELL CORRELATION
5TH GD ITBS	E-5	9	66.22	10.87	3.62	-0.18	-0.42	9.44	17.58	1.61	0.146	0.02
VOCAB. NCE	C	9	56.77	11.27	3.76	0.97	1.47					
5TH GD ITBS	E-5	9	69.88	16.45	5.48	0.35	-1.67	23.22	27.25	2.56	0.034	0.12
READ NCE	C	9	46.66	19.48	6.49	-1.48	2.97					
5TH GD ITBS	E-5	9	64.11	11.75	3.92	-0.40	-0.48	12.22	14.02	2.61	0.031	0.20
MTH CNCPTS NCE	C	9	51.88	11.62	3.87	0.04	-1.74					
5TH GD ITBS	E-5	9	65.22	14.83	4.94	-1.23	0.34	18.55	19.51	2.85	0.021	0.40
MATH PROB. NCE	C	9	46.66	18.72	6.24	0.08	-1.94					
5TH GD ITBS	E-5	9	63.00	15.47	5.16	-0.58	-0.74	23.55	18.92	3.73	0.006	0.21
COMPUTE NCE	C	9	39.44	9.37	3.12	0.31	-0.78					
5TH GD ITBS	E-5	9	65.66	13.14	4.38	-0.97	0.37	18.44	14.13	3.91	0.004	0.31
TOT. MATH NCE	C	9	47.22	11.92	3.97	0.07	-1.81					
5TH GD ITBS	E-5	9	68.55	12.86	4.29	0.14	-1.68	18.22	15.98	3.42	0.009	0.35
TOT. BATRY. NCE	C	9	50.33	11.75	3.91	-0.26	-1.72					
5TH GD COAT	E-5	9	61.77	11.35	3.78	-0.22	-1.13	4.77	18.53	0.77	0.462	0.23
VERBAL NCE	C	9	57.00	11.73	3.91	-0.50	1.48					
5TH GD COAT	E-5	9	63.66	14.25	4.75	0.88	-0.74	12.11	23.85	1.52	0.166	0.36
MATH NCE	C	9	51.55	14.49	4.83	-0.98	0.72					
5TH GD COAT	E-5	9	61.55	14.35	4.78	0.34	-1.71	5.44	19.71	0.83	0.431	0.33
NON VERB. NCE	C	9	56.11	10.06	3.35	0.497	2.36					

APPENDIX 1B

1983-84 COHORT 4 MEAN GESELL RATIO

EARLY-5 GROUP	
Mean	.89
sd.	.06

COMPARISON GROUP	
Mean	.86
sd	.05

APPENDIX 1C: COHORT 5 1984-85 PAIRED "T" TEST

	GROUP	N	MEAN	S.D.	S.E.	SKEWI	KURTI	MEAN DIF.	S. D.	T VALUE PAIRED	T PROB	GESELL CORRELATION
3RD GD ITBS	E-5	17	60.18	21.91	5.31	-0.93	0.92	3.59	33.11	0.45	0.661	0.29
VOCAB. NCE	C	17	56.59	19.68	4.77	-0.18	1.89					
3RD GD ITBS	E-5	17	58.47	17.12	4.15	-0.98	0.31	2.00	29.18	0.28	0.781	0.14
READ NCE	C	17	56.47	19.08	4.63	0.87	0.64					
3RD GD ITBS	E-5	17	59.70	19.69	4.78	-0.10	0.96	5.29	0.26	0.84	0.415	0.17
MTH CNCPTS NCE	C	17	54.41	16.81	4.08	0.46	0.28					
3RD GD ITBS	E-5	17	60.18	15.22	3.69	0.87	1.93	3.23	24.64	0.54	0.596	0.08
MATH PROB. NCE	C	17	56.94	13.90	3.37	-0.19	0.83					
3RD GD ITBS	E-5	17	61.35	18.54	4.50	0.52	-0.92	5.06	21.82	0.96	0.353	0.31
COMPUTE NCE	C	17	56.29	12.78	3.10	-0.09	-1.67					
3RD GD ITBS	E-5	17	61.41	16.66	4.04	0.12	1.57	4.76	24.34	0.81	0.431	0.17
TOT. MATH NCE	C	17	56.64	13.84	3.36	0.01	-0.16					
3RD GD ITBS	E-5	17	62.41	16.37	3.97	-0.05	-0.23	6.11	26.88	0.94	0.362	0.27
TOT. BATRY. NCE	C	17	56.29	16.45	3.99	0.93	1.05					
3RD GD COAT	E-5	17	62.00	18.69	4.53	-0.19	-0.37	11.82	30.05	1.62	0.124	.4027*
VERBAL NCE	C	17	50.18	16.74	4.06	0.12	-0.46					
3RD GD COAT	E-5	17	63.82	14.61	3.54	-0.59	0.33	11.29	27.51	1.69	0.110	.4058*
MATH NCE	C	17	52.53	18.88	4.58	-1.32	2.42					
3RD GD COAT	E-5	17	65.65	19.54	4.74	-0.04	-0.51	12.53	29.76	1.74	0.102	0.30
NON VERB. NCE	C	17	53.12	19.63	4.76	0.13	1.42					
4TH GD. MEAP	E-5	7	307.71	25.38	9.59	-0.40	-0.95	-1.57	38.63	-0.11	0.910	0.21
STORY SS	C	7	309.28	18.20	6.88	-0.51	0.06					
4TH GD. MEAP	E-5	7	292.42	17.37	6.56	0.54	0.85	5.71	29.87	0.51	0.630	.5228*
INFO. SS	C	7	286.71	22.04	8.33	2.31	5.51					
4TH GD. MEAP	E-5	7	94.28	11.58	4.37	-1.09	0.82	8.57	27.69	0.82	0.440	.6316**
MATH OBJ	C	7	85.71	21.94	8.29	-1.71	3.09					

APPENDIX 1C

1984-85 COHORT 5 MEAN GESELL RATIO

EARLY-5 GROUP	
Mean	.92
sd.	.05

COMPARISON GROUP	
Mean	.89
sd	.07

* P=.05
** P=.01
*** P=.00

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APPENDIX 1D: COHORT 6 1985-86 PAIRED "T" TEST

	GROUP	N	MEAN	S.D.	S.E.	SKEWI	KURTI	MEAN DIF.	S. D.	T VALUE PAIRED	T PROB	GESELL
3RD GD ITBS	E-5	38	64.00	15.74	2.55	-0.45	-0.23	5.81	24.56	1.46	0.153	0.18
VOCAB. NCE	C	38	58.18	16.58	2.69	-0.85	0.80					(CUBES=.26*)
												CORRELATION
3RD GD ITBS	E-5	38	64.11	19.88	3.22	-0.45	0.37	4.21	25.86	1.00	0.322	0.19
READ NCE	C	38	59.89	16.69	2.71	-0.22	0.09					
3RD GD ITBS	E-5	38	65.82	13.65	2.21	-0.35	0.89	7.26	23.22	1.93	0.062	0.19
MTH CNCPTS NCE	C	38	58.71	17.36	2.81	-0.60	0.16					(CUBES=.31**)
3RD GD ITBS	E-5	38	70.58	16.87	2.74	-0.07	-0.84	10.63	26.10	2.51	0.017	0.22
MATH PROB. NCE	C	38	59.94	17.66	2.86	0.68	-0.03					
3RD GD ITBS	E-5	38	68.00	14.31	2.32	-0.71	0.70	11.95	23.69	3.11	0.004	0.08
COMPUTE NCE	C	38	56.05	17.66	2.86	-0.25	0.19					
3RD GD ITBS	E-5	38	69.66	13.73	2.23	-0.52	0.55	9.92	22.11	2.77	0.009	0.21
TOT. MATH NCE	C	38	59.73	15.56	2.52	-0.25	-0.62					
3RD GD ITBS	E-5	38	67.29	15.94	2.58	0.17	-0.35	7.05	23.37	1.86	0.071	.2643*
TOT. BATRY. NCE	C	38	60.24	16.41	2.66	-0.75	1.09					(CUBES=.31**)
3RD GD COAT	E-5	38	62.51	17.09	2.77	0.38	-0.66	6.76	25.12	1.66	0.105	0.10
VERBAL NCE	C	38	55.84	14.83	2.41	-0.51	1.13					
3RD GD COAT	E-5	38	65.84	15.11	2.45	-0.50	-0.05	9.10	21.02	2.67	0.011	0.21
MATH NCE	C	38	56.73	13.42	2.18	-0.34	0.16					(CUBES=.35**)
3RD GD COAT	E-5	38	66.39	13.66	2.22	-0.11	-0.38	4.16	21.35	1.20	0.238	.2536*
NON VERB. NCE	C	38	62.23	16.43	2.66	-0.27	0.002					(CUBES=.34**)
4TH GD. MEAP	E-5	21	311.62	28.02	6.11	-0.34	-1.02	6.29	35.08	0.82	0.420	0.21
STORY SS	C	21	305.33	18.44	4.02	0.38	0.80					(INTER=.29*)
4TH GD. MEAP	E-5	21	295.57	20.42	4.45	0.50	0.70	4.38	26.93	0.75	0.460	.2565*
INFO. SS	C	21	291.19	18.68	4.08	-0.78	2.25					0.00
4TH GD. MEAP	E-5	21	96.76	14.87	3.25	-0.39	16.66	3.43	18.96	0.83	0.410	0.16
[redacted]	[redacted]	21	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

APPENDIX 1D

1985-86 COHORT 6 MEAN GESELL RATIO

EARLY-5 GROUP	
Mean	.95
sd.	.07

COMPARISON GROUP	
Mean	.93
sd	.08

54

55

* P=.05
** P=.01

APPENDIX 2: ITBS, COAT, & MEAP MEANS & STANDARD DEVIATIONS FOR UNMATCHED COHORT 3-6

		82-83 5TH & 7TH			83-84 5TH GRD			84-85 3RD & 4TH			85-86 3RD & 4TH		
	GROUP	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.
ITBS	E-5	27	65	21	27	59	24	33	59	15	47	64	19
READ NCE	C	13	59	13	23	49	19	29	57	18	49	61	17
ITBS	E-5	27	67	18	27	58	19	33	60	20	47	65	16
VOCAB. NCE	C	13	58	13	23	56	15	29	56	18	49	59	18
ITBS	E-5	27	66	15	27	56	19	33	58	16	47	65	13
MTH CNCPTS NCE	C	13	58	15	23	51	16	29	54	19	49	59	17
ITBS	E-5	27	65	19	27	56	54	33	58	16	47	71	19
MATH PROB. NCE	C	13	62	19	23	52	18	29	59	14	49	60	18
ITBS	E-5	27	64	18	27	55	22	33	58	16	47	68	17
COMPUTE NCE	C	13	55	15	23	47	16	29	56	13	49	58	19
ITBS	E-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOT. MATH NCE	C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ITBS	E-5	27	68	19	27	59	22	33	61	15	47	68	16
TOT. BATRY. NCE	C	13	58	14	23	52	16	29	57	16	49	61	17
COAT	E-5	27	62	21	27	58	15	33	57	19	47	63	17
VERBAL NCE	C	13	55	16	23	54	18	29	49	16	49	56	15
COAT	E-5	27	67	21	27	61	18	33	55	17	47	66	15
MATH NCE	C	13	54	12	23	52	20	29	53	17	49	57	14
COAT	E-5	27	67	18	27	61	19	33	62	21	47	67	15
NON VERB. NCE	C	13	58	17	23	54	17	29	54	20	49	62	16
MEAP	E-5	23	313	22	NA	NA	NA	28	308	21	35	312	30
STORY SS	C	14	308	24	NA	NA	NA	9	307	16	36	308	19
MEAP	E-5	23	303	17	NA	NA	NA	28	296	20	35	302	23
INFO. SS	C	14	290	26	NA	NA	NA	9	288	20	36	295	22
MEAP	E-5	23	94	11	NA	NA	NA	28	94	12	35	98	12
MATH OBJ	C	14	88	14	NA	NA	NA	9	89	20	36	93	14

APPENDIX 2A IOWA TEST OF BASIC SKILLS (ITBS) MEAN NCE DIFFERENCES FOR COHORTS 3-6 MATCHED FOR GESELL RATIO AND GENDER

ITBS READING SUBTESTS

		82-83 5TH GRD.				83-84 5TH GRD				84-85 3RD GRD.				85-86 3RD GRD.			
	GROUP	N	MEAN	S.D.		N	MEAN	S.D.		N	MEAN	S.D.		N	MEAN	S.D.	
ITBS	E-5	9	69.66	11.45		9	66.22	10.87		17	60.18	21.91		38	64.00	15.75	
VOCAB. NCE	C	9	57.33	15.52	(P=.04)	9	56.77	11.27		17	56.59	19.68		38	58.11	16.58	
	DISTRICT	750	64			759	62.7			768	66.40			794	66.90		
ITBS	E-5	9	72.67	16.08		9	69.88	16.45		17	58.47	17.12		38	64.11	19.88	
READ NCE	C	9	61.44	15.66	(P=.04)	9	46.66	19.48	(P=.03)	17	56.47	19.08		38	59.89	16.69	
	DISTRICT	750	66			759	65.6			768	67.00			794	66.40		

ITBS MATH SUBTESTS

		82-83 5TH GRD				83-84 5TH GRD				84-85 3RD GRD.				85-86 3RD GRD.			
	GROUP	N	MEAN	S.D.		N	MEAN	S.D.		N	MEAN	S.D.		N	MEAN	S.D.	
ITBS	E-5	9	65.66	15.78		9	64.11	11.75		17	59.70	19.69		38	65.82	13.65	
MTH CNCPTS NCE	C	9	58.11	18.42		9	51.88	11.62	(P=.03)	17	54.41	16.81		38	58.71	17.36	(P=.06)
	DISTRICT	750	63			759	60.5			768	64.00			795	65.8		
ITBS	E-5	9	67.55	11.29		9	65.22	14.83		17	60.18	15.22		38	70.58	16.87	
MATH PROB. NCE	C	9	62.77	18.95		9	46.66	18.72	(P=.02)	17	56.94	13.9		38	59.94	17.66	(P=.017)
	DISTRICT	750	66			759	64.5			768	64.10			794	68		
ITBS	E-5	9	70.55	15.5		9	63.00	15.47		17	61.35	18.54		38	68.00	14.31	
COMPUTE NCE	C	9	54.55	17.69	(P=.07)	9	39.44	9.37	(P=.006)	17	56.29	12.78		38	56.05	17.66	(P=.004)
	DISTRICT	750	64			758	64			767	63.90			794	68		
ITBS	E-5	9	69.11	14.09		9	65.66	13.14		17	61.41	16.66		38	69.66	13.74	
TOT. MATH NCE	C	9	58.66	17.08	(P=.07)	9	47.22	11.92	(P=.004)	17	56.64	13.84		38	59.73	15.54	(P=.009)
	DISTRICT	750	64			758	63			767	66.00			794	68.6		

ITBS TOTAL BATTERY

		82-83 5TH GRD				83-84 5TH GRD				84-85 3RD GRD.				85-86 3RD GRD.			
	GROUP	N	MEAN	S.D.		N	MEAN	S.D.		N	MEAN	S.D.		N	MEAN	S.D.	
ITBS	E-5	9	73.11	13.74		9	68.55	12.86		17	62.41	16.37		38	67.29	15.94	
TOT. BATRY. NCE	C	9	58.33	17.21	(P=.01)	9	50.33	11.74	(P=.009)	17	56.29	16.45		38	60.24	16.41	(P=.07)
	DISTRICT	750	68			757	64.9			763	67.90			792	68.5		

APPENDIX 2A: E-5's consistently have higher means some of of which are (or approach) statistical significance using 2-tailed test. There were no significant differences for any subtest for Cohort 5 See Appendicies1A-1D for a more comprehensive statistical analysis

APPENDIX 2B: COGNITIVE ABILITY TEST (COAT) MEAN NCE DIFFERENCES FOR COHORTS 3-6 MATCHED FOR GESELL RATIO AND GENDER

		82-83 5TH GRD.				83-84 5TH GRD			84-85 3RD GRD.			85-86 3RD GRD.			
	GROUP	N	MEAN	S.D.		N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	
COAT	E-5	9	69.66	8.12		9	61.77	11.35	17	62.00	18.69	38	62.61	17.09	
VERBAL NCE	C	9	54.44	19.83	(P=.026)	9	57.00	11.73	17	50.18	16.74	38	55.84	14.83	
	DISTRICT	730	62	NA		761	60.1	NA	767	60.60	NA	797	65.80	NA	
COAT	E-5	9	69.66	15.74		9	63..66	14.25	17	63.82	14.61	38	65.84	15.11	
MATH NCE	C	9	66.88	12.84		9	51.55	14.49	17	52.53	18.88	38	56.73	13.42	(P=.011)
	DISTRICT	732	65	NA		764	64	NA	766	62.00	NA	797	65.80	NA	
COAT	E-5	9	68.44	11.7		9	61.55	14.35	17	65.65	19.54	38	66.39	13.66	
NON VERB. NCE	C	9	57.77	21.29		9	56.11	10.06	17	53.12	19.63	38	62.23	16.43	
	DISTRICT	731	65	NA		761	63.2	NA	767	66.00	NA	797	68.90	NA	

APPENDIX 2B : Reflects the Mean COAT Normal Curve Equivalent differences betweem the E-5 and Comparison Groups for Cohorts 3-6. E-5's consistently have higher means, only two of which have statistical significance at .05 level using a 2-tailed test. See Appendicies1A-1D for a more comprehensive statistical analysis.

APPENDIX 2C: MICHIGAN EDUCATIONAL ASSESSMENT PROGRAM (MEAP) MEAN STANDARD SCORES FOR COHORTS 3-6 MATCHED FOR GESELL RATIO AND GENDER

		82-83 7TH GRD			83-84 7TH GRD			84-85 4TH GRD.			85-86 4TH GRD.		
	GROUP	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.	N	MEAN	S.D.
								NA	NA	NA			
MEAP	E-5	7	318.28	24.14	NA	NA	NA	7	307.71	25.38	21	311.62	28.02
STORY SS	C	7	306.85	31.31	NA	NA	NA	7	309.28	18.20	21	305.33	18.44
	DISTRICT	574	309.60	21.50	NA	NA	NA	NA	NA	NA	597	314.40	23.70
MEAP	E-5	7	302.85	19.17	NA	NA	NA	7	292.43	17.37	21	295.57	20.42
INFO. SS	C	7	289.71	36.23	NA	NA	NA	7	286.71	22.04	21	291.19	18.68
	DISTRICT	404	300.60	22.30	NA	NA	NA	NA	NA	NA	442	301.80	19.30
MEAP	E-5	7	94.71	11.67	NA	NA	NA	7	94.29	11.59	21	96.76	14.87
MATH OBJ	C	7	87.71	18.43	NA	NA	NA	7	85.71	21.94	21	93.33	14.21
	DISTRICT	742	NA	NA	NA	NA	NA	NA	NA	NA	784	NA	NA

TABLE 2C Reflects the Mean Reading Standard Scores and Math Objectives for E-5 and Comparison Groups. Farmington District MEAP reading means are also presented. The Mean number of Math objectives was not available for the District. Although the E-5's have slightly higher means on all three MEAP subtests, none of the differences approach the .05 level of probability.

QUESTIONS	1988 PARENT MAILED SURVEY N=147 PERCENT RESPONSE CATEGORIES YES	NO	?	1991 PARENT PHONE SURVEY N=24 PERCENT RESPONSE CATEGORIES YES	NO	?
1. BENEFICIAL TO CHILD	94	1	5	100	0	0
2. CHILD SUCESSFUL IN KDG.	92	5	3	88	6	6
3. NEED ADDITIONAL SERVICES						
BUCKET BRIGADE	3	-	-	13	-	-
RESOURCE ROOM	2	-	-	17	-	-
SPEECH THERAPY	7	-	-	13	-	-
SOCIAL WORK	9	-	-	4	-	-
REMEDIAL READING	4	-	-	8	-	-
REMEDIAL MATH	7	-	-	4	-	-
GIFTED	2	-	-	25	-	-
OTHER	6	-	-	0	-	-
4. CURRENTLY WORKING AT GRD LEVEL						
ABOVE GRADE LEVEL	26	-	-	58	-	-
AT GRADE LEVEL	68	-	-	29	-	-
BELOW GRADE LEVEL	10	-	-	13	-	-
5. AREAS PROGRAM HELPED						
FINE MOTOR	65	-	-	29	-	-
GROSS MOTOR	40	-	-	17	-	-
READING AND MATH	39	-	-	8	-	-
PEER INTERACTION	50	-	-	46	-	-
SELF ESTEEM	59	-	-	38	-	-
6. STUDENT FEELINGS ABOUT SELF						
SUCESSFUL	82	-	-	100	-	-
UNSUCCESFUL	14	-	-	0	-	-
UNSURE	3	-	-	0	-	-
7. RIGHT DECISION TO BE IN E-5	93	1	5	96	0	4

APPENDIX 4: Reflects the percent of parents responding to each category on the Parent Survey of 1988 (mailed to all former participants) and on the 1991Parent Phone Survey (sample of 24 parents from Cohort 3, all but 2 now in 7th grade). The number of children of the respondents to the 1988 Survey were in the following grades :
KDG=66 1ST=33 2ND=3 3RD-20 4TH=23 5TH=2

APPENDIX 4A: STAFF SURVEY FOR EARLY 5'S PROGRAM For each response to the questions the number responding and the corresponding percent of the respondents is given.

1. Your current assignment :

3=2.2%	27=19.6%	45=32.6%	24=17.4%	26=18.8%	13=9.4%
Prekdg..	Kdg.	1st	2nd	3rd	Principal

2. Total years of experience in education:

8=5.8%	7=5.1%	16=11.6%	25=18.1%	82=59.4%
1-2	3-5	5-10	10-15	15 or more

3. In general, how would you characterize Early Fives Program children's social adjustment?

28=21.1%	0	4=3.0%	64=48.1%	37=27.8%
Don't know	Poor	Below Average	Average	Excellent

4. In general how would you characterize Early Fives Program childrens' academic adjustment?

30=23.1%	0	4=3.1%	65=50%	31=23.8%
Don't know	Poor	Below Average	Average	Excellent

5. How important is the E-5 Program to your ability to maintain high academic standards in your classroom(s)?

33=26.2%	2=1.6%	5=4.0%	43=34.1%	43=34.1%
Don't know	Poor	Below Average	Average	Excellent

6. If the Early Fives Program was eliminated, in your judgement , to what degree are K-2 teachers prepared to accommodate these children?

9=6.8%	10=7.6%	17=12.9%	60=45.5%	36=27.3%
Don't know	Unrealistic	Not Prepared	Somewhat	Prepared

7. Are there observable characteristics of Early Fives Program children that make it possible for you to identify them?

19=14.5%	28=21.4%	40=30.5%	26=19.8%	18=13.7%
Not sure	No	Yes for a few	Yes for many	Yes for most

8. In general, how would you rate the value of the Early Fives Program?

19=14.4%	10=7.6%	12=9.1%	37=28.0%	54=40.9%
Not Sure	Questionable	Valuable for limited few	Valuable for some	Valuable for many

9. To what degree have you read or heard about any negative effects of Early Fives type programs?

44=33.1%	39=29.3%	31=23.3%	16=12%	3=2.3%
Not at all	Very little	Some	Considerable	Extensive

10. How would you rate your progress toward implementing a developmentally appropriate Early Childhood Curriculum?

19=14.4%	7=5.3%	18=13.6%	38=28.8%	50=37.9%
Not Sure	0-25%	25-50%	50-75%	75-100%

11. Overall, How would you rate Farmington Kdg.-2nd grade teachers' progress toward implementing a developmentally appropriate Early Childhood Curriculum?

23=17.4%	14=10.6%	33=25%	37=28%	25=18.9%
Not Sure	0-25%	25-50%	50-75%	75-100%

APPENDIX 4B: Reflects the percentage of positive and negative responses for each question by staff assignment.

	CATEGORY	PRE-K	KDG.	1ST	2ND	3RD	PRIN	TOTAL
3. E-5 SOCIAL ADJUSTMENT	POSITIVE	66.7	92.6	73.3	73.9	52.2	100	75.9
(CHI SQUARE= 38.60 P=.0007)	NEGATIVE	33.3	0	6.7	0	0	0	3
	D.K.	0	7.4	20	26.1	47.8	0	21.1
4. E-5 ACADEMIC ADJUSTMENT	POSITIVE	100	88.9	74.4	69.6	43.5	100	73.8
(CHI SQUARE= 22.71 P=.09)	NEGATIVE	0	3.7	4.7	0	4.3	0	3.1
	D.K.	0	7.4	20.9	30.4	52.2	0	23.1
5. E-5 PRGM HELP MAINT HIGH ACADEMIC	POSITIVE	66.7	84.6	70.7	60.9	54.5	63.7	68.2
(CHI SQUARE= 15.55 P=.74)	NEGATIVE	0	3.8	7.3	8.6	0	9.1	5.6
	D.K.	33.3	11.5	22	30.4	45.5	27.3	26.2
6. K-2 TCHRS ACCOMD. E-5 IF ELIMINATE	POSITIVE	33.3	62.9	79.1	78.3	70.8	75	72.8
(CHI SQUARE= 29.03 P=.09)	NEGATIVE	67.7	29.6	18.6	13	12.5	25	20.5
	D.K.	0	7.4	2.3	8.7	16.7	0	6.8
7. OBSERVABLE E-5 CHARACTERISTICS	POSITIVE	100	84.6	58.2	60.8	37.4	91.7	64
(CHI SQUARE= 39.87 P=.005)	NEGATIVE	0	15.4	27.9	21.7	25	8.3	21.4
	D.K.	0	0	14	17.4	37.5	0	14.5
8. VALUE OF E-5 PROGRAM	POSITIVE	100	96.3	76.8	69.5	54.2	100	78
(CHI SQUARE= 30.29 P=.06)	NEGATIVE	0	3.7	7	13	12.5	0	7.6
	D.K.	0	0	16.3	17.4	33.3	0	14.4
9. READ OR HEARD OF NEG. EFFECTS	POSITIVE	33.3	40.7	25.6	43.4	29.2	76.9	37.6
(CHI SQUARE= 18.79 P=.53)	NEGATIVE	66.6	62.2	74.5	56.5	70.8	23.1	62.4
10. YOUR PROGRESS WITH DEVEL. APPROPT.	POSITIVE	100	96.3	62.8	52.1	43.4	76.9	66.7
(CHI SQUARE= 85.44 P=.0000)	NEGATIVE	0	3.7	25.6	43.5	0	23.1	18.9
	D.K.	0	0	11.6	4.3	56.5	0	14.4
11. K-2 PROGRESS WITH DEVEL. APPROPT.	POSITIVE	33.3	48.1	53.5	43.5	34.8	53.9	46.9
(CHI SQUARE= 24.67 P=.21)	NEGATIVE	66.7	40.7	32.6	34.7	26	46.2	35.6
	D.K.	0	11.1	14	21.7	39.1	0	17.4

APPENDIX 4C Reveals the percent of responses to each category for each question by staff assignment. Note significance of response by assignment for questions 3, 7 and 10.

	CATEGORY	PRE-K	KDG.	1ST	2ND	3RD	PRIN	TOTAL
3. E-5 SOCIAL ADJUSTMENT	5+	66.7	18.5	31.1	30.4	17.4	41.7	27
(CHI SQUARE= 38.60 P=.0007)	4+		74.1	42.2	43.5	34.8	58.3	48.1
	3-	33.3		6.7				3
	D.K.		7.4	20	26.1	47.8		21
4. E-5 ACADEMIC ADJUSTMENT	5+	33.3	29.6	25.6	26.1	8.7	27.3	23.8
(CHI SQUARE= 22.71 P=.09)	4+	66.7	59.3	48.8	43.5	34.8	72.7	5
	3-		3.7	4.7		4.3		3
	D.K.		7.4	20.9	30.4	52.2		23.1
5. E-5 PRGM HELP MAINT HIGH ACADEMIC	5+	66.7	34.6	39	34.8	22.7	27.3	34
(CHI SQUARE= 15.55 P=.74)	4+		50	31.7	26.1	31.8	36.4	34.1
	3-		3.8	4.9	4.3		9.1	
	2-			2.4	4.3			1
	D.K.	33.3	11.5	22	30.4	45.5	27.3	26.2
6. K-2 TCHRS ACCOMD. E-5 IF ELIMINATE	5+		18.5	37.2	34.8	20.8	16.7	27
(CHI SQUARE= 29.03 P=.09)	4+	33.3	44.4	41.9	43.5	50	58.3	45.5
	3-	67.7	11.1	16.3	13	4.2	8.3	12.9
	2-		18.5	2.3		8.3	16.7	7
	D.K.		7.4	2.3	8.7	16.7		6
7. OBSERVABLE E-5 CHARACTERISTICS	5+	66.7	23.1	9.3	17.4	8.3		13
(CHI SQUARE= 39.87 P=.005)	4+	33.3	19.2	23.3	21.7	8.3	25	19
	3+		42.3	25.6	21.7	20.8	66.7	30.5
	2-		15.4	27.9	21.7	25	8.3	21
	D.K.			14	17.4	37.5		14
8. VALUE OF E-5 PROGRAM	5+	66.7	37	44.2	43.5	29.2	50	40.9
(CHI SQUARE= 30.29 P=.06)	4+	33.3	51.9	25.6	13	20.8	25	2
	3+		7.4	7	13	4.2	25	9
	2-		3.7	7	13	12.5		7.6
	D.K.			16.3	17.4	33.3		14
9. READ OR HEARD OF NEG. EFFECTS	5+		3.7	2.3			7.7	2.3
(CHI SQUARE= 18.79 P=.53)	4+		18.5	7	13	12.5	15.4	10
	3+	33.3	18.5	16.3	30.4	16.7	53.8	23
	2-	33.3	33.3	32.6	21.7	33.3	15.4	29.3
	NO-	33.3	28.9	41.9	34.8	37.5	7.7	33.1
10. YOUR PROGRESS WITH DEVEL. APPROPT	5+	100	77.8	34.9	21.7	13	23.1	37.9
(CHI SQUARE= 85.44 P=.0000)	4+		18.5	27.9	30.4	30.4	53.8	28.8
	3-		3.7	23.3	26.1		7.7	13
	2-			2.3	17.4		15.4	5
	D.K.			11.6	4.3	56.5		14.4
11. K-2 PROGRESS WITH DEVEL. APPROPT	5+	33.3	14.8	23.3	17.4	17.4	15.4	18
(CHI SQUARE= 24.67 P=.21)	4+		33.3	30.2	26.1	17.4	38.5	28
	3-	66.7	29.6	27.9	13	13	38.5	2
	2-		11.1	4.7	21.7	13	7.7	10
	D.K.		11.1	14	21.7	39.1		17.4

APPENDIX 5A: THIRD GRADE REPORT CARD READING AND MATH RATINGS FOR COHORTS 3 - 6

		COHORT 3 1982-83					COHORT 4 1983-84					COHORT 5 1984-85					COHORT 6 1985-86				
GROUP		N	MEAN	S.D.	F	T	N	MEAN	S.D.	F	T	N	MEAN	S.D.	F	T	N	MEAN	S.D.	F	T
READING NEEDS IMPROVEMENT	E-5	7	1.43	2.7			7	2.57	4.4			17	1.41	2.2			27	3.67	5.4		
	C	7	4.29	7.1			7	3.14	4.1			17	4.35	5.4			27	2.70	4.3		
					6.99*	1.21				0.87	0.32				5.79*	2.24*				0.64	-0.82
READING HIGH ACHIEVEMENT	E-5	7	9.14	7.5			7	5.00	6.6			17	13.41	14.2			27	5.37	7.3		
	C	7	5	6.0			7	1.71	3.3			17	3.53	6.6			27	6.93	9.6		
					0.65	-1.58				0.25	-1.3				0.22	-3.29**				1.71	0.62
MATH NEEDS IMPROVEMENT	E-5	7	3.00	4.3			7	4.57	10.4			17	2.38	5.2			27	3.04	5.1		
	C	7	1.00	1.5			7	10.29	9.2			17	2.06	3.4			27	2.18	3.6		
					0.13	-1.34				0.77	1.15				0.44	-0.12				0.49	-0.72
MATH HIGH ACHIEVEMENT	E-5	7	14.85	16.3			7	6.57	8.4			17	16.47	14.2			27	8.44	7.1		
	C	7	11.86	12.3			7	3.43	7.5			17	14.17	21.6			27	7.26	8.5		
					0.57	-0.64				0.78	-0.74				2.32	-0.50				1.44	0.51

APPENDIX 5A: Reflects the Mean, Standard Deviation (S.D.), F Value, and T Value of "Needs Improvement" and "High Achievement" marks on third grade report cards for Reading, and Math for the Early -5 and Comparison Groups for Cohorts 3-6. The respective F value and T value for each Paired Mean is reflected below the Means. Only Cohort 5 revealed any significant differences on 3rd grade report card means. (*=.05 & **=.01 Probabilly for a two tailed test of signigicance).

APPENDIX 5B: THIRD GRADE REPORT CARD BEHAVIOR RATINGS FOR COHORTS 3-6

		COHORT 3 1982-83					COHORT 4 1983-84					COHORT 5 1984-85					COHORT 6 1985-86				
	GROUP	N	MEAN	S.D.	F	T	N	MEAN	S.D.	F	T	N	MEAN	S.D.	F	T	N	MEAN	S.D.	F	T
BEHAVIOR NEEDS IMPROVEMENT	E-5	7	3.86	5.8			7	6.14	8.3			17	1.65	3.6			27	8.00	10.6		
	C	7	4.71	7.3			7	11.00	10.0			17	4.29	5.1			27	4.41	4.3		
					1.58	0.28				1.47	1.23				13.0	2.10 (P=.052)				0.31	1.45
BEHAVIOR HIGH ACHIEVEMENT	E-5	7	23.7	16.5			7	10.29	13.3			17	21.59	15.1			27	11.59	10.4		
	C	7	11.71	13.8			7	3.43	7.8			17	14.41	15.3			27	14.41	14.9		
					0.70	-1.68				0.34	-1.15				1.02	1.69				2.05	0.80
ATTENDANCE	E-5	7	5.21	5.2			7	5.86	4.2			17	7.12	4.0			27	7.69	4.9		
	C	7	5.50	4.9			7	7.57	6.8			17	5.32	5.5			27	8.44	8.8		
					0.90	0.10				2.65	0.55				1.88	1.01				3.17	0.39

APPENDIX 5B: Reflects the Mean, Standard Deviation (S.D.), F Value, and T Value of "Needs Improvement" and "High Achievement" marks on third grade report cards forBehavior Ratings and Attendance for the Early -5 and Comparison Groups for Cohorts 3-6. The respective F value and T value for each Paired Mean is reflected below the Means. Cohort 5 Behavior Needs Improvement only near significant difference (P=.052).

FARMINGTON PUBLIC SCHOOLS

SECOND AND THIRD GRADE PROGRESS REPORT

STUDENT NAME _____

GRADE _____ SCHOOL YR _____

SCHOOL _____

TEACHER _____

PRINCIPAL

ATTENDANCE	FALL	MID-YEAR	SPRING	YEAR END
DAYS ABSENT				
TARDINESS				

	FALL			MID YEAR			SPRING			YEAR END		
	NEEDS TO IMPROVE	MAKING PROGRESS	HIGH ACHIEVEMENT	NEEDS TO IMPROVE	MAKING PROGRESS	HIGH ACHIEVEMENT	NEEDS TO IMPROVE	MAKING PROGRESS	HIGH ACHIEVEMENT	NEEDS TO IMPROVE	MAKING PROGRESS	HIGH ACHIEVEMENT
ATTITUDES AND WORK HABITS												
SHOWS CONSIDERATION OF OTHERS												
WORKS WELL AS A MEMBER OF A GROUP												
USES SELF CONTROL												
TAKES CARE OF PERSONAL BELONGINGS												
OBSERVES SCHOOL AND SAFETY RULES												
CONTROLS UNNECESSARY TALKING												
WORKS INDEPENDENTLY ON TASK												
LISTENS CAREFULLY												
FOLLOWS DIRECTIONS												
WORKS CAREFULLY AND NEATLY												
MAKES GOOD USE OF TIME												
COMPLETES ASSIGNMENTS ON TIME												
READING (A PROCESS EMBRACING ALL CURRICULAR AREAS)												
DEMONSTRATES A POSITIVE ATTITUDE TOWARD READING												
USES A VARIETY OF READING STRATEGIES TO GAIN MEANING												
APPLIES DECODING SKILLS												
UNDERSTANDS LESSON VOCABULARY												
COMPREHENDS WHAT IS READ												
IDENTIFIES MAIN IDEAS												
RECOGNIZES STORY ELEMENTS (PROBLEM, RESOLUTION, ETC.)												
RECOGNIZES DIFFERENT TEXT TYPES												
READS FLUENTLY TO GAIN MEANING												
PARTICIPATES IN EXTENSION AND ENRICHMENT READING												
HBJ BASAL PLACEMENT												
LANGUAGE (SPEAKING, LISTENING, WRITING)												
EXPRESSES IDEAS CLEARLY IN SPEAKING												
DEVELOPING PROPER HANDWRITING SKILLS												
EXPRESSES IDEAS CLEARLY IN WRITTEN WORK												
ABILITY TO ORGANIZE AND PRESENT INFORMATION												
USES GRAMMAR SKILLS IN WRITTEN WORK												
USES CAPITALIZATION AND PUNCTUATION SKILLS TAUGHT												
DEVELOPING DICTIONARY SKILLS												
SPELLING												
SPELLS CORRECTLY IN SPELLING LESSON												
SPELLS CORRECTLY IN DAILY WORK												
MATHEMATICS												
IS LEARNING THE COUNTING PROCESS												
UNDERSTANDS THE CONCEPT OF SETS												
COMPREHENDS AND USES PLACE VALUE CORRECTLY												
KNOWS BASIC NUMBER FACTS OF (+ - x ÷)												
UNDERSTANDS THE ADDITION PROCESS												
UNDERSTANDS THE SUBTRACTION PROCESS												
UNDERSTANDS THE BASICS OF MULTIPLICATION												
UNDERSTANDS THE BASICS OF DIVISION												
SOLVES STORY PROBLEMS LOGICALLY												
IS LEARNING OTHER BASIC CONCEPTS SUCH AS COUNTING MONEY, MEASUREMENT, TIME, ETC.												
WORKS ACCURATELY												
INSTRUCTIONAL MATH LEVEL												
SCIENCE AND HEALTH												
UNDERSTANDS AND INTERPRETS CONCEPTS												
CONTRIBUTES TO DISCUSSION												
PARTICIPATES IN EXPERIMENTS AND ACTIVITIES												
SOCIAL STUDIES												
UNDERSTANDS AND INTERPRETS CONCEPTS												
CONTRIBUTES TO DISCUSSION												
PARTICIPATES IN PROJECTS AND ACTIVITIES												
ART AND MUSIC												
EFFORT AND ATTITUDE IN ART ACTIVITIES												
EFFORT AND ATTITUDE IN MUSIC ACTIVITIES												

The terms NEEDS TO IMPROVE, MAKING PROGRESS, and HIGH ACHIEVEMENT are a means of reporting your child's progress in relation to the level of growth at the beginning of each period.

PLACEMENT FOR _____ YR

GRADE _____

TEACHER COMMENTS:

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EAST MIDDLE SCHOOL

25000 MIDDLEBELT ROAD, FARMINGTON HILLS, MICHIGAN 48018 PHONE 489 3601

STUDENT NAME	GRADE	DATE	STUDEP

COURSE	MARK	MARK	MARK	MARK	FINAL	TEACHER	COMMENTS
LANGUAGE ARTS - 7						MRS. GUERTIN	MORE EFFORT WILL BRING IMPROVEMENT
SOCIAL STUDIES-7						MR. VANCE	
MATH - 7						MR. LUBIENIECKI	
SCIENCE - 7						MRS. BRENNAN	A POLITE AND COOPERATIVE STUDENT
LIFE MNGMNT/COMPUTERS /EXPLRNG TECHNOLOGY						SPINDLER/WARN/RIDINGS	
MUSIC-7						MRS. WALLACE	
ART-7						MRS. WALLIS	A PLEASURE TO HAVE IN CLASS A POLITE AND COOPERATIVE STUDENT
PHYSICAL EDUCATION-7						MRS. SCHMIEDE	
PHYSICAL EDUCATION-7						MRS. SCHMIEDE	
DAYS ABSENT:							

APPENDIX 6

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EAST MIDDLE SCHOOL

WE HOPE YOU HAVE A SAFE AND HAPPY SPRING BREAK!

COPY

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KEY TO ACADEMIC AND EXPLORATORY MARKS

A - Outstanding Achievement
B - Good Achievement
C - Average - Satisfactory
D - Poor (but passing) Achievement
E - Failure (the pupil has not achieved a passing grade and it is in the best interest of the student to undertake further work in order to become ready for subsequent subjects)
I - Incomplete (pupil has been granted additional time to complete required work before a permanent letter grade is determined)

KEY TO EFFORT MARKS

1 - OUTSTANDING
2 - GOOD
3 - SATISFACTORY
4 - POOR
5 - CONFERENCE NEEDED

KEY TO ENRICHMENT MARKS

CR Credit
NC No Credit

KEY TO CITIZENSHIP MARKS

1 = OUTSTANDING
2 - GOOD
3 - ACCEPTABLE
4 = INAPPROPRIATE BEHAVIOR
5 - CONFERENCE NEEDED

Dear Parents

Student report cards are marked 4 times a year. Please carefully examine each report and discuss it with your child. If you are not receiving this report regularly, please contact the school office.

A student's progress in school is definitely influenced by the parent's interest. Parents can assist students by seeing that attendance is regular, that a program of home study is followed, and by encouraging the student to improve in needed areas.

The administrators, counselors and teachers are available daily for conferences. Complete cooperation between the home and school will aid your child in becoming a better student now, and a better citizen in life.

This report is for your records and need not be returned to the school.

Sincerely,

William L. Martin
Principal

James A. Pardon
Assistant Principal

Krista K. Collson
Sharon McConaghie
Counselors

Dear Parents,

In an effort to evaluate our Early Fives (Developmental Kindergarten) Program, we would like you to answer the following questions about your childs progress in school:

Grade your child currently is in _____?

1. Do you feel that the growth year spent in Development Kindergarten was beneficial for your child?

   _____ Yes

   _____ No

   _____ Undecided

2. Do you feel your child was successful in Kindergarten the following year?

   _____ Yes

   _____ No

   _____ Undecided

3. Has your child needed any of the following services?

   _____ Bucket Brigade

   _____ Resource Room

   _____ Speech Therapy

   _____ Social Work

   _____ Remedial Reading

   _____ Remedial Math

   _____ Gifted

   _____ Other

4. Is your child currently working

   _____ At grade level

   _____ Below grade level

   _____ Above grade level

5. What areas did the extra year help your child?

5. Continued

_____ Fine motor

_____ Gross motor

_____ Cognitive

_____ Social/emotional

_____ Self esteem

6. How does your child feel about himself/herself as a student?

_____ Successful

_____ Unsucessful

7. If you had another child who appeared to need an additional year, would you place him/her in a Development Program?

_____ No

_____ Yes

_____ Undecided

If you answered no or undecided, please answer the following :

Do you think it would have been better to give your child an extra year?

_____ After kindergarten

_____ After 1st

Please make any comments you feel would help us evaluate the program.

FARMINGTON PUBLIC SCHOOLS

January 1991

To: Superintendent's Cabinet
Elementary Principals
Early Fives Study Committee

From: Early Fives Evaluation Planning Committee:
(J. White, M.L. Somerville, G. Zimmerer,
C. Mahalak, R. Ruiter, H.R. Peper)

The following document is the Proposed Evaluation Plan for the Early Fives Program. It reflects ideas that were discussed in meetings in the Central Office on Friday December 14,1990, January 3,1991 and brief a lunch meeting on December 19,1990 as well as numerous phone conferences among the above listed Early Fives Evaluation Planning Committee.

The Plan follows the format of the Highmeadow Evaluation Planning Instrument which was adapted from the multiple-method and multiple-source approach advocated by B.R. Worthen and promoted by Oakland Schools. The data collected should provide a solid basis for a Data Based Decision Making Process.

Initially the Evaluation Committee generated nine (9) Evaluation Questions that were subsequently reduced to six (6). The questions are as follow:

- 1. Has the Early Fives intervention had any long range positive or negative effects on the childrens' Academic Achievement?
  MEASUREMENTS: ITBS, Cognitive Skills Test, MEAP, Report Card Grades, Need for Resource Room support, Need for Remedial help, Retention data.

- 2. Has the Early Fives intervention had any long range positive or negative effects on the childrens' School Affective Development?
  MEASUREMENTS: Report Card ratings for Attitude Toward School, Work Habits and Social Adjustment.

- 3. What do Early Fives Parents report about the Program after Two years (1st grade)? Four years (grade 3)? Six to eight years (grades 5 to 7).
  MEASUREMENTS: Early Fives Parent Survey of 1988, Parent Phone Survey of small sample of students (25) now in 7 th grade.

- 4. What do Teachers & Principals report about the Program?
  MEASUREMENTS: Survey of K-3 teachers and Elementary Principals (Full Committee Input).

- 5. What are the characteristics of an Early Fives child?
  MEASUREMENTS: Early Fives Records and 3rd Grade Cognitive Skills Test.

- 6. What does a review of the literature reveal on Early Fives type programs?

The following three question were dropped from the plan in that the needed measures were more complex to obtain than the nature of this study could justify:

7. Is there any evidence that a significant number of identified Early Fives have a unique learning style? (This question might be explored in the screening process.)

8. Does being in Early Fives necessarily imply delayed Special Ed. referral and early diagnosis? How frequent has this occurred? What are the overall effects?

9. Has the Early Fives intervention had any long range positive or negative effects on the childrens' Psycho-motor Development?

The first page that follows reflects an analysis of what grade levels each Cohort of Early Fives were in for the past 11 years. It also reflects the years that Achievement, Cognitive Skills and MEAP test data are available for each Cohort. This Matrix is helpful in conceptualizing the various data points that were considered and the final data points that were agreed upon as well as the rationale. Note in particular the right hand marginal notations summarizing the multiple data comparisons agreed upon. The five page Evaluation Plan that follows the Matrix address the six Evaluation Questions as to what data will be collected and how it be collected, analyzed and reported .

FARMINGTON EARLY FIVES EVALUATION: GRADE & TEST MATRIX ANALYSIS

3 & 5 **Bold** * = 3rd & 5th Grade Achievement Test Results — Program= Early Fives (E5) Received Program

4 & 7 **Bold** * = 4th & 7th Grade MEAP Results — Comparison= Recommended but NOT in program.

		ORIGINAL #	# LOCATED	80/81	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91
COHORT 1	PROGRAM			E5	K	1	2	*3	*4	*5	6	*7	8	9
1980-81	COMPARISON			K	1	2	*3	*4	*5	6	*7	8	9	10
COHORT 2	PROGRAM				E5	K	1	2	*3	*4	*5	6	*7	8
1981-82	COMPARISON				K	1	2	*3	*4	*5	6	*7	8	9
COHORT 3	PROGRAM					E5	K	1	2	*3	*4	*5	6	*7
1982-83	COMPARISON					K	1	2	*3	*4	*5	6	*7	8
COHORT 4	PROGRAM						E5	K	1	2	*3	*4	*5	6
1983-84	COMPARISON						K	1	2	*3	*4	*5	6	7
COHORT 5	PROGRAM							E5	K	1	2	*3	*4	*5
1984-85	COMPARISON							K	1	2	*3	*4	*5	6
COHORT 6	PROGRAM								E5	K	1	2	*3	*4
1985-86	COMPARISON								K	1	2	*3	*4	*5
COHORT 7	PROGRAM									E5	K	1	2	*3
1986-87	COMPARISON									K	1	2	*3	4
COHORT 8	PROGRAM										E5	K	1	2
1987-88	COMPARISON										K	1	2	*3
COHORT 9	PROGRAM											E5	K	1
1988-89	COMPARISON											K	1	2
COHORT 10	PROGRAM												E5	K
1989-90	COMPARISON												K	1
COHORT 11	PROGRAM													E5
1990-91	COMPARISON													K

SUMMARY OF POTENTIAL AND PROPOSED TEST DATA

The BOLD diagonal lines reflect eight (8) proposed comparisions of available test data between the Early Fives and the respective Comparision Groups for Cohorts 3-6.

The proposed analysis will provide the following comparisons:

- 3rd, 5th & 7th grade test results between the two groups in Cohort 3
- 3rd & 5th grade test results between the two groups in Cohort 4
- 3rd grade test results between the two groups in Cohort 5
- 3rd & 4th grade test results between the two groups in Cohort 6

The THIN diagonal lines reflect available test data that has been ruled out of the study for the following reasons:

1. All data in Cohort 1 & 2 was ruled out as the program was in the formative stages; tuition was assessed; and records were not consistently kept.

2. MEAP data prior to 1989 is not readily available for computer analysis.

3. CTBS and Cog. Skills test data for 90/91 is not available until late Spring.

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EARLY FIVES EVALUATION PLAN

SECOND REVISION 1/3/91

EVALUATION QUESTIONS	INFORMATION REQUIRED	SOURCE OF INFORMATION	METHOD FOR COLLECTING INFO.	INFORMATION COLLECTION			ANALYSIS	REPORTING		
				WHO	HOW	WHEN		TO WHOM	HOW	WHEN
1. Has the Early Fives intervention had any long range positive or negative effects on the childrens' Academic Achievement?	Student name, ID number birthdate, sex, ethnic & Gesell profiles & Cog. Skills data to create two separate stratified matches (Ges prof / Cog Sk) between the two groups a. E 5 Program b. Comparison A. Annually 1985/86 thru 89/90 Achievement Test Scores in : Reading Math	3rd & 5th grade test results for All children recommended for E5 in Cohorts 3,4,5 &6	1. ITBS Results 2. Cog. Skills Results	R. Peper C. Mahalak E. Bauer	Create and analyse longitudinal data base from District Testing Program 1985/86-89/90	Jan-Feb 91	1. Compare the mean ITBS NCE of the Early five group with the Comparison Group & Nat. Norm. 2. Compare the % in each group functioning at or above a specified NCE. 3. Test Stat. Sig. of each comparison.	Board of Education	Written Reports	April 1991
	B. MEAP 4th & 7th Grade Test Scores 89/90-90/91	4th grade MEAP test results for All children recommended for E5 in Cohorts 3 & 6	2. MEAP Results	R. Peper C. Mahalak	Create and analyze MEAP data base for Cohort 3 7th grade & for Cohort 6 4th grade	Jan-Feb 91	1. Compare mean number of MEAP objectives mastered for E5 & Cmpran gps with State Norm. 2. Test Stat. Sig. of each comparison.			
	C. Success in School	3rd grd. Report Card Grades for stratified matched sample of 40 E5 & 40 Comparison from Cohorts 3,4,5 & 6 (10 from each group from each Cohort) 7 th gd. report card grades for all matches in Cohort 3	3. Report Card Marks	C. Mahalak Clerical help	Obtain Report cards from Cum. Folders and total the number of Needs Improve checks for the year for Read & Math 7th gd. grades from computer	Jan-Feb 91	1. Compare average number of Needs Improvement marks for E5 & Cmpran and local norm group. 2. Test Stat. Sig. of each comparison.			

EARLY FIVES EVALUATION PLAN

SECOND REVISION 1/3/91

EVALUATION QUESTIONS	INFORMATION REQUIRED	SOURCE OF INFORMATION	METHOD FOR COLLECTING INFO.	INFORMATION COLLECTION			ANALYSIS	REPORTING		
				WHO	HOW	WHEN		TO WHOM	HOW	WHEN
CONTINUED FROM PAGE 1 1. Has the Early Fives intervention had any long range positive or negative effects on the childrens' Academic Achievement?	C. Success in School (Continued	Children referred to SE Resource Room	Special Ed. Child Accounting Computer Data Base	C. Mahalak Libby Panetta	Verify names from Cohorts 3 -6 that are in Spec. Ed. Resource Room	Jan-Feb 91	Compare average number of SE referrals &/or certified students in Program & Comparison groups and determine if significant dif. exists.	Board of Education	Written Reports	April 1991
		Remedial Referrals	Compensatory Ed. Student Data Base	C. Mahalak Learning Center Teachers	Verify names from Cohort 3-6 that are Certified Comp. Ed.	Jan-Feb 91	Compare average number of Remedial referals &/or names on official Comp. Ed list for Program & Comparison groups and determine if significant dif. exists.			
		Discrepancies found in grade placement from test analysis	Child Accounting Data Base	C. Mahalak	Verify names from Cohort 3-6 that have been Retained	Jan-Feb 91	Compare average number of Retention referals &/or Decision to Retain for Program & Comparison groups and determine if significant dif. exists.			

EARLY FIVES EVALUATION PLAN

SECOND REVISION 1/3/91

EVALUATION QUESTIONS	INFORMATION REQUIRED	SOURCE OF INFORMATION	METHOD FOR COLLECTING INFO.	INFORMATION COLLECTION			ANALYSIS	REPORTING		
				WHO	HOW	WHEN		TO WHOM	HOW	WHEN
2. Has the Early Fives Intervention had any long range positive or negative effects on the childrens' School Affective Development?	A. Attitude toward school B. Work Habits C. Social Adjustment	3rd gd. Report Card Grades for stratified matched sample of 40 E5 & 40 Comparison from Cohorts 3,4,5 & 6 (10 from each group from each Cohort) 7 th gd report card grades for all matches in Cohort 3	Report Card Marks	C. Mahalak Clerical help	Obtain Report cards from Cum. Folders and total the number of Needs Improvement checks for the year for Attitude & Work Habits Shows Effort Items.	Jan-Feb 91	Compare average number of Needs Improvement marks for Program & Comparison groups and determine if significant dif. exists.	Board of Education	Written Reports	April 1991
			Report Card Attendance Records	C. Mahalak Clerical help	Obtain Report cards from Cum. Folders and calculate Total Absences	Jan-Feb 91	Compare average number of days absent for Program & Comparison groups and determine if significant dif. exists.			

EARLY FIVES EVALUATION PLAN

SECOND REVISION 1/3/91

EVALUATION QUESTIONS	INFORMATION REQUIRED	SOURCE OF INFORMATION	METHOD FOR COLLECTING INFO.	INFORMATION COLLECTION			ANALYSIS	REPORTING		
				WHO	HOW	WHEN		TO WHOM	HOW	WHEN
3. What do Early Fives Parents report about the Program after Two years (1st grade)? Four years (grade 3)? Six- eight years (grade 5-7)?	Parent Opinion	1988 Parent Survey results for 2-4 years after program. 1991 parent phone survey	Parent Survey was distributed to all Early Fives Parents with child in grades 1-5. Report Summary tabulations. Conduct phone survey of 25 parents of E5s in Cohort 3 grade 7. (If 25 can not draw from grade 6.)	R. Peper C. Mahalak Sommerville G. Zimmerer R. Ruiter J. White	Summarize Previous Study E5 committee give input. Eval. Planning Committee Develop Parent Survey and collect from Early Five Parents with children in grade 7	Jan-Feb 91 Jan-Feb 91	Summarize highlights of previous report Calculate percent of 7th grade parents responding positively to survey questions.	Board of Education	Written Reports	April 1991
4. What do Teachers & Principals report about the Program?	Teacher Opinion Principal Opinion	1991 Staff Survey	Staff Survey Results from all Kdg. -3rd grade teachers and El. Principals.	R. Peper C. Mahalak Sommerville G. Zimmerer R. Ruiter J. White	Eval. Planning Committe Develop Optical Scan Staff Survey Distribute and collect from all Kdg. -3rd. grade teachers and El. Principals	Jan-Feb 91	Survey will be scanned and results printed by Oakland ISD. Peper will assist with Analysis of the data and write the report or assist a designated person.			

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EARLY FIVES EVALUATION PLAN

SECOND REVISION 1/3/91

EVALUATION QUESTIONS	INFORMATION REQUIRED	SOURCE OF INFORMATION	METHOD FOR COLLECTING INFO.	INFORMATION COLLECTION			ANALYSIS	REPORTING		
				WHO	HOW	WHEN		TO WHOM	HOW	WHEN
5. What are the characteristics of an Early Fives child?	Descriptive information on Profile of Early Fives child	Birthdate Sex Ethnic Gesell Profiles 3rd &/or 5th grade Cognitive Ability Test	Early Fives Records for a typical Cohort	G. Zimmerer R. Peper C. Mahalak Clerical assistance	Enter info. into personal computer data base	Jan-Feb 91	Peper assist Carolyn: Report Summary from data base by number and percent of each personal characteristic. Report average score and frequency distribution for Gesell and Cognitive Abilities Tests.	Board of Education	Written Reports	April 1991
6. What does a review of the literature reveal on Early Five type programs?	Literature review	ERIC etc.	Literature Review J. Firestone Children's Institute EMU	R. Peper C. Mahalak Sommerville G. Zimmerer R. Ruiter J. White	Summarize general revie of lit.	Jan-Feb 91	Summarize general review of lit.	Board of Education	Written Reports	April 1991

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SUMMARY OF ANALYSES

	ITBS		COAT		MEAP		3 GD. RPT CD		3 GD. RPT CD		7 GD RPT		PSVY	PPH	STAFF SVY						
	E-5	COMP.	E-5	COMP.	E-5	COMP.	E-5	COMP.	E-5	COMP.	E-5	COMP.			PK	K	1	2	3	P	T
N	73	73	73	73	73	73	58	58	58	58	7	7	147	24			#				
COHORT 3	7	7	4	4	3	3	7	7	7	7	7	7									
COHORT 4	7	7	4	4	3	3	7	7	7	7											
COHORT 5	7	7	4	4	3	3	7	7	7	7											
COHORT 6	7	7	4	4	3	3	7	7	7	7											
AGGREGATE	7	7	4	4	3	3	7	7	7	7											
TOTALS	35	35	20	20	15	15	35	35	35	35	7	7	18	18	9	9	9	9	9	9	9

GRAND TOTAL 393 ANALYSES

EARLY FIVES EVALUATION TEST MATRIX ANALYSIS

3 & 5 Bold * = 3rd & 5th Grade Achievement Test Results — Early Fives (E5) Received Program

4 & 7 Bold *= 4th & 7th Grade MEAP Results — Comparison Recommended but NOT in program.

		80/81	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96
COHORT 1	E-5	E5	K	1	2	*3	*4	*5	6	*7	8	9	10	11	12		
1980-81	COMPARI	K	1	2	*3	*4	*5	6	*7	8	9	10	11	12			
COHORT 2	E-5		E5	K	1	2	*3	*4	*5	6	*7	8	9	10	11	12	
1981-82	COMPARE		K	1	2	*3	*4	*5	6	*7	8	9	10	11	12		
COHORT 3	E-5			E5	K	1	2	*3	*4	*5	6	*7	8	9	10	11	12
1982-83	COMPARE			K	1	2	*3	*4	*5	6	*7	8	9	10	11	12	
COHORT 4	E-5				E5	K	1	2	*3	*4	*5	6	*7	8	9	10	11
1983-84	COMPARE				K	1	2	*3	*4	*5	6	7	8	9	10	11	12
COHORT 5	E-5					E5	K	1	2	*3	*4	*5	6	*7	8	9	10
1984-85	COMPARE					K	1	2	*3	*4	*5	6	7	8	9	10	11
COHORT 6	E-5						E5	K	1	2	*3	*4	*5	6	*7	8	9
1985-86	COMPARE						K	1	2	*3	*4	*5	6	7	8	9	10
COHORT 7	E-5							E5	K	1	2	*3	*4	*5	6	*7	8
1986-87	COMPARE							K	1	2	*3	4	*5	6	7	8	9
COHORT 8	E-5								E5	K	1	2	*3	*4	*5	6	*7
1987-88	COMPARE								K	1	2	*3	4	*5	6	7	8
COHORT 9	E-5									E5	K	1	2	*3	*4	*5	6
1988-89	COMPARE									K	1	2	*3	4	*5	6	7
COHORT 10	E-5										E5	K	1	2	*3	*4	*5
1989-90	COMPARE										K	1	2	*3	4	*5	6
COHORT 11	EXP.											E5	K	1	2	*3	*4
1990-91	CONTROL											K	1	2	*3	4	*5
COHORT 12	E-5												E5	K	1	2	*3
1991-92	COMPARE												K	1	2	*3	4
COHORT 13	E-5													E5	K	1	2
1992-93	COMPARE													K	1	2	*3
COHORT 14	E-5														E5	K	1
1993-94	COMPARE														K	1	2
COHORT 15	E-5															E5	K
1994-95	COMPARE															K	1
COHORT 16	E-5																E
[redacted]	COM[redacted]																K

SUMMARY OF FINDINGS

TABLE	MEASURE	E-5 FINDINGS	LEVEL OF SIG.	IMPLICATONS
2A	ITBS AGGREGATE TOTAL	HIGHER MEANS FOR ALL 7 SUBTESTS	.05 VOC. & READ .001 TOT. MATH & TOT. BTRY	VERY STRONG
2A-2	ITBS BY COHORT	HIGHER MEANS FOR TOTAL BATTERY	.01 COH 3 & 4 .06 FOR COH. 6 NOT SIG. COH 5	MODERATE STRONG
APPEND. 2A	ITBS SUBTESTS BY COHORT	HIGHER MEANS 20 OF 20 SUBTESTS	10 OF 20 SIG. (NONE FOR COH 5)	MODERATE STRONG
2B	COAT AGGREGATE TOTAL	HIGHER MEANS FOR ALL 4 SUBTESTS	P=.01: VERBAL, NONVERB & CMPSTE .001 QUANT	VERY STRONG
2B-2	COAT BY COHORT	HIGHER MEANS FOR ALL 4 SUBTESTS	P=.05 COH 3 CLOSE FOR COH 5 & 6 P=.06	MODERATE
APPEND. 2B	COAT SUBTESTS BY COHORT	HIGHER MEANS12 OF 12	2 OF 12 SIG.	MODERATE
2C	MEAP AGGREGATE BY SUBTEST	HIGHER MEANS FOR ALL 3 SUBTESTS	MATH APPROACH SIG.AT .05 WITH I TAIL TEST	WEAK
APPENDIX 2C	MEAP	SLIGHTLY HIGHER 11 OF 12	NONE SIG.	WEAK
3	RETENTION	COMPARISON=37.37% VS. E-5=2.97%	12 TIMES GREATER RETENTION P=.001 ALL COH S	VERY STRONG
4A	LEARNING CENTER	COMPARISON=36.7% VS. E-5=17.81%	2 TIMES AS MANY P=.05	STRONG
4B	SPECIAL ED.	COMPARISON=12.5% VS. E-5=14.6%	ONLY 2% DIFFERENCE	NONE
5	AGGREGATE % BY CATEG.	CMP R&M= 51.7% E-5 R=82.8%M=81%	P=.001 HIGH READING P=.05 MATH ACHIEVEMENT	VERY STRONG
5A	AGGREGATE % CONTRIBUTES	CMP=23.33% VS E-5= 46.67%	2 TIMES AS MANY P=.05	STRONG
5B	AGGREG COH 3-6 RPT. CD.	HIGHER 5 OF 7	NONE SIG. (READING CLOSE P=.06)	WEAK
6	7TH GRD. RPT. CRD. GPA	HIGHER 6 OF 7	P=.01 LANG. ARTS P=.05 MATH P=.05 ATTEND	VERY STRONG
7	PARENT SURVEY	98% & 93.5% POSITIVE	NO NEGATIVES IN EITHER STUDY	VERY STRONG
8	STAFF SURVEY	78%=POS. & 7.6%=NEG. 14.4%=DK	VERY SUPPORTIVE	STRONG

- Aggregating the four Cohorts together into larger sample results in very significant differences.
- No Negative effects were observed.
- Although there are consistently higher scores for the E-5 the size of the matched samples are extremely small lending to variability. Results not consistent. (For example: no sig dif on any ach. test data for Cohort 5)

APPENDIX 11

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